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TEST DATA FOR COMPARATIVE  
EVALUATION OF THREE  
VISUAL DISTRESS SIGNALS

By  
M. K. NIEMILLER

NWSC/CR/RDTR-23  
24 February 1976

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A comparative evaluation program was conducted with three types of visual distress signals; the one-cell flashlight, commercial chemical light, and double ampule chemical light. All of the data generated during the laboratory test phase of this program is given in this report. Analysis of the test data is given in the Comparative Evaluation of Visual Distress Signals Report (NWSC/CR/RDTR-22). The data given includes the numerical and graphical printouts of all of the devices tested in this program.		

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## INTRODUCTION

This report contains the laboratory test data generated in the comparative evaluation of the standard issue lifejacket light (one-cell flashlight, NSN 6230-00-255-0166), a commercial chemical light (trade name Cyalume, 6 ml size) and a double ampule chemical light (NAVWPNSUPPCEN Crane supplied, 4 ml size).

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## DISCUSSION OF DATA FORMAT

This report contains the laboratory test data generated in the comparative evaluation of the one-cell flashlight, commercial chemical light, and the double ampule chemical light. Analysis of this test data is given in the Comparative Evaluation of Visual Distress Signals Report (NWSC/CR/RDTR-22). The purpose of this report is to present the data used in that analysis; no additional analysis is attempted in this report.

The data obtained during the laboratory test program are presented in both numerical and graphic form for each device tested. The numerical information includes the light output at various times after activation, the Measured and Predicted Areas under the light output curves, the Light Capacity of each device, and Estimated Time Out, and the Estimated Sighting Range at 10, 30, and 60 minutes after activation of the test unit.

The Light Output is the measured light output (candlepower or footlamberts) of each device tested. These measurements are presented graphically, following the numerical printouts, to show the decrease in light output with time. The Measured and Predicted Areas are used to calculate the light capacity of each device. The Measured Area is the total area under the light output curve shown for the particular device tested. To obtain the Predicted Area, the light output curve was extrapolated by a least square linear fit equation until the light output had decreased to zero. The area under the least square line is the Predicted Area. The time at which the

light output has decreased to zero is the Estimated Time Out shown on the printout. The Light Capacity for each device is obtained by summing the Measured and Predicted Areas and converting to the appropriate measurement units (candlepower-hours for the flashlight and lambert-hours per liter for the chemical lights). The A + Bx numbers on the numerical printout are the numbers used in the prediction equation to determine the Predicted Area and the Estimated Time Out.

The last entry on the numerical printout is the Estimated Sighting Range at 5 mile visibility. The Estimated Sighting Range is given in feet and calculated for each device at 10, 30, and 60 minutes after activation of the device. The Estimated Sighting Range, or estimated visibility range, calculations were based on a 90% probability of detection with 5 mile atmospheric visibility conditions. Further discussion of the Estimated Sighting Range is given in the Comparative Evaluation Report.

Testing of the units was coordinated so that corresponding test unit numbers received the same conditioning. Thus, flashlight unit #1, commercial chemical light unit #1, and double ampule chemical light #1 all received the same conditioning prior to test. The various test conditionings and corresponding unit numbers are given in Table I.

TABLE I  
TEST CONDITIONING CORRELATION WITH TEST UNIT NUMBER

<u>TEST CONDITIONING</u>	<u>UNIT NUMBER</u>
Temperature and Humidity, Packaged 2 Days	1-3
Temperature and Humidity, Packaged 4 Days	4-6
Temperature and Humidity, Packaged 7 Days	7-9
Temperature and Humidity, Packaged 10 Days	10-12
Temperature and Humidity, Packaged 14 Days	13-15
Temperature and Humidity, Unpackaged 2 Days	16-18
Temperature and Humidity, Unpackaged 4 Days	19-21
Temperature and Humidity, Unpackaged 7 Days	22-24
Temperature and Humidity, Unpackaged 10 Days	25-27
Temperature and Humidity, Unpackaged 14 Days	28-30
Five Foot Drop	31-40
Salt Spray, Packaged	41-52
Salt Spray, Unpackaged	53-64
Control, +40°F	65-76
Control, Ambient	77-88
Control, +110°F	89-100

FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

CANDLEPOWER VS TIME(MIN)

SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
1	0.227	0.208	0.182	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.10
2	0.232	0.206	0.177	0.15	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08
3	0.183	0.168	0.154	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08
4	0.169	0.138	0.123	0.11	0.09	0.08	0.08	0.07	0.07	0.06	0.06	0.06
5	0.246	0.221	0.192	0.17	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.09
6	0.097	0.111	0.092	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05

SAMPLE#	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION A	EQUATION + B*X
1	41.0	27.6	1.143	14.3	0.152	-0.000178
2	37.2	24.0	1.020	14.0	0.136	-0.000162
3	35.2	24.9	1.002	14.6	0.131	-0.000151
4	20.3	17.1	0.723	13.9	0.098	-0.000118
5	41.2	23.2	1.073	13.0	0.155	-0.000199
6	18.5	17.8	0.606	18.1	0.062	-0.000057

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
1	6143.	5834.	5613.
2	6115.	5775.	5425.
3	5655.	5475.	5286.
4	5252.	5023.	4733.
5	6280.	5961.	5638.
6	4627.	4495.	4196.



FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
7	0.112	0.060	0.020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.212	0.192	0.171	0.15	0.14	0.12	0.12	0.11	0.08	0.07	0.07	0.06
9	0.184	0.168	0.152	0.14	0.13	0.12	0.11	0.10	0.10	0.09	0.09	0.08
10	0.123	0.104	0.082	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.05
11	1.240	0.222	0.198	0.18	0.16	0.15	0.14	0.14	0.13	0.12	0.12	0.11
12	0.208	0.190	0.168	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.09	0.08

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY	EST TIME	PREDICTION EQUATION	
	AREA	AREA	(CP HRS)	OUT (HRS)	A	B*X
7	1.2	0.1	0.021	11.8	0.000	-0.000000
8	35.0	5.6	0.677	8.1	0.154	-0.000317
9	35.0	24.3	0.988	14.4	0.131	-0.000151
10	19.3	13.4	0.545	14.7	0.069	-0.000078
11	45.2	34.4	1.327	15.2	0.167	-0.000184
12	37.5	24.9	1.039	14.2	0.138	-0.000163

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
7	3760.	*-159015	-539.
8	5957.	5699.	5464.
9	5867.	5456.	5291.
10	4739.	4295.	4201.
11	5290.	5027.	5780.
12	5933.	5667.	5454.

FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75

SAMPLE#	CANDLEPOWER VS TIME(MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
16	1.095	0.089	0.078	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05
17	1.113	0.114	0.109	0.10	0.09	0.09	0.09	0.08	0.08	0.07	0.07	0.07
18	1.133	0.126	0.114	0.11	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07
19	0.992	0.090	0.080	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05
20	0.138	0.144	0.126	0.11	0.11	0.10	0.09	0.09	0.08	0.08	0.08	0.08
21	0.071	0.085	0.067	0.06	0.05	0.05	0.03	0.04	0.04	0.04	0.04	0.04

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION		
	AREA	AREA			A	+	B*X
16	18.5	20.4	0.648	18.8	0.066	-	-0.000059
17	27.4	24.7	0.868	16.2	0.106	-	-0.000109
18	29.3	34.6	1.049	19.7	0.104	-	-0.000080
19	18.5	24.1	0.709	21.2	0.064	-	-0.000051
20	30.1	33.9	1.068	19.0	0.109	-	-0.000095
21	14.9	42.1	0.951	38.2	0.049	-	-0.000021

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
16	4420.	4201.	4024.
17	4875.	4790.	4661.
18	5066.	4859.	4730.
19	4458.	4234.	4028.
20	5344.	5072.	4882.
21	4354.	3942.	3714.

FLASHLIGHT 14-DAY TRN UNPACKAGED 9/22/75

CANDLEPOWER VS TIME(MIN)

SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
22	0.143	0.135	0.124	0.12	0.11	0.11	0.10	0.09	0.09	0.09	0.08	0.08
23	0.094	0.088	0.083	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04
24	0.211	0.188	0.162	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08
25	0.148	0.135	0.122	0.11	0.11	0.10	0.09	0.09	0.08	0.08	0.08	0.07
26	0.236	0.217	0.191	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.12	0.11
27	0.184	0.143	0.112	0.08	0.06	0.07	0.07	0.06	0.06	0.06	0.06	0.06

SAMPLE#	MEASURED AREA	PREDICITED AREA	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICITION EQUATION		
					A	+	B*X
22	30.8	29.8	1.009	17.0	0.117		-0.000115
23	19.0	9.7	0.479	12.3	0.074		-0.000102
24	35.3	28.5	1.080	15.6	0.132		-0.000141
25	29.0	24.4	0.900	15.5	0.114		-0.000122
26	45.9	35.7	1.326	15.6	0.164		-0.000175
27	22.9	32.7	0.927	22.5	0.079		-0.000059

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
22	5204.	5044.	4898.
23	4412.	4303.	4142.
24	5912.	5590.	5319.
25	5212.	5014.	4840.
26	6232.	5948.	5711.
27	5322.	4840.	4283.

FLASHLIGHT 14-DAY T&M 9/23/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
13	0.175	0.155	0.134	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.07	0.06
14	0.050	0.033	0.026	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00
15	0.091	0.053	0.053	0.05	0.04	0.03	0.04	0.04	0.04	0.03	0.03	0.03
28	0.114	0.114	0.102	0.09	0.08	0.07	0.07	0.07	0.06	0.06	0.06	0.06
29	0.077	0.075	0.059	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
30	0.031	0.068	0.071	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
	AREA	AREA			A	S*X
13	29.5	11.2	0.679	10.7	0.122	=0.000189
14	4.9	0.5	0.090	7.1	0.024	=0.000057
15	11.7	2.3	0.235	8.1	0.063	=0.000130
28	23.2	13.6	0.613	13.0	0.091	=0.000117
29	11.1	3.7	0.250	9.9	0.050	=0.000283
30	15.6	15.9	0.583	15.3	0.076	=0.000083

ESTIMATE SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
13	5506.	5198.	4964.
14	2510.	2640.	2434.
15	3564.	3562.	3369.
28	4072.	4675.	4465.
29	4124.	3740.	3594.
30	3979.	4046.	4099.

FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
41	0.097	0.090	0.075	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.03
42	0.173	0.162	0.141	0.12	0.12	0.10	0.09	0.09	0.08	0.07	0.07	0.06
43	0.162	0.152	0.136	0.12	0.12	0.10	0.09	0.08	0.08	0.07	0.06	0.06
44	0.109	0.099	0.085	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03
45	0.196	0.181	0.161	0.14	0.14	0.12	0.11	0.11	0.09	0.09	0.08	0.08
46	0.177	0.167	0.145	0.13	0.12	0.11	0.09	0.09	0.08	0.08	0.07	0.07

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION		
	AREA	AREA			A	+	B*X
41	15.1	2.1	0.287	7.8	0.067		-0.000142
42	30.5	11.3	0.695	10.7	0.122		-0.000191
43	29.5	11.5	0.683	11.1	0.114		-0.000172
44	17.1	3.4	0.342	8.6	0.072		-0.000141
45	35.4	16.6	0.867	11.9	0.137		-0.000192
46	31.0	12.9	0.741	11.1	0.125		-0.000187

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
41	4458.	4124.	3942.
42	5585.	5291.	5050.
43	5456.	5227.	5044.
44	4622.	4338.	4090.
45	5829.	5567.	5344.
46	5647.	5357.	5104.

FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

SAMPLE #	CANDLEPOWER VS TIME(MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
47	0.129	0.116	0.097	0.08	0.07	0.06	0.05	0.05	0.04	0.04	0.03	0.03
48	0.187	0.167	0.143	0.13	0.11	0.09	0.08	0.07	0.07	0.06	0.06	0.06
49	0.149	0.138	0.117	0.09	0.08	0.07	0.06	0.06	0.06	0.05	0.05	0.04
50	0.206	0.008	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51	0.310	0.279	0.244	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13	0.12
52	0.205	0.184	0.159	0.14	0.12	0.11	0.09	0.09	0.08	0.07	0.07	0.06

SAMPLE #	MEASURED	PREDICITED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
	AREA	AREA			A	B+X
47	17.9	3.0	0.349	8.5	0.069	-0.000137
48	29.8	10.3	0.655	11.0	0.106	-0.000161
49	22.4	5.9	0.472	9.6	0.088	-0.000153
50	0.4	0.0	0.007	0.0	0.000	0.000000
51	52.8	24.6	1.290	11.9	0.201	-0.000281
52	32.3	13.1	0.756	11.4	0.121	-0.000178

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE #	10 MIN	30 MIN	60 MIN
47	4908.	4583.	4311.
48	5650.	5327.	5063.
49	5258.	4920.	4604.
50	1556.	*-159018	*-159015
51	6852.	6520.	6260.
52	3864.	5542.	5227.

FLASHLIGHT SALT SPRAY, UNPACKAGED - 9/19/75

SAMPLE#	CANDLEPOWER VS TIME(MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
53	0.091	0.084	0.079	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05
54	0.164	0.151	0.133	0.11	0.10	0.09	0.08	0.07	0.08	0.06	0.05	0.05
55	0.047	0.013	0.142	0.04	0.09	0.00	0.00	0.00	0.00	0.02	0.00	0.00
56	0.001	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57	1.111	0.103	0.093	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.06
58	0.225	0.209	0.186	0.17	0.15	0.14	0.13	0.13	0.11	0.10	0.09	0.08

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
	AREA	AREA			A	B * X
53	19.4	13.3	0.545	13.8	0.077	-0.000093
54	20.5	2.3	0.480	6.8	0.163	-0.000408
55	3.7	0.0	0.145	4.7	0.091	-0.000325
56	0.0	0.0	0.001	5.4	0.000	-0.000002
57	23.3	22.2	0.760	16.8	0.089	-0.000088
58	40.5	10.6	0.851	9.4	0.171	-0.000305

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
53	4330.	4213.	4112.
54	5435.	5172.	4820.
55	1914.	5314.	3309.
56	-539.	*-159015	-539.
57	4685.	4506.	4401.
58	6145.	5989.	5670.



FLASHLIGHT SALT SPRAY, UNPACKAGED -9/19/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
59	0.126	0.116	0.106	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.06
60	0.105	0.097	0.092	0.08	0.08	0.07	0.07	0.06	0.06	0.06	0.05	0.05
61	0.190	0.174	0.155	0.14	0.13	0.12	0.11	0.09	0.08	0.08	0.07	0.06
62	0.103	0.095	0.088	0.08	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05
63	0.101	0.092	0.086	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05
64	0.118	0.107	0.099	0.09	0.09	0.08	0.07	0.06	0.06	0.06	0.05	0.04

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION		
	AREA	AREA			A	+	B*X
59	25.8	21.8	0.794	15.6	0.099		-0.000106
60	21.4	9.0	0.507	11.0	0.098		-0.000137
61	32.4	8.0	0.674	9.3	0.131		-0.000235
62	21.5	18.4	0.664	15.8	0.082		-0.000097
63	20.2	10.5	0.511	12.1	0.082		-0.000113
64	22.4	8.2	0.510	10.9	0.084		-0.000129

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
59	4904.	4747.	4587.
60	4579.	4484.	4330.
61	5742.	5488.	5241.
62	4550.	4416.	4250.
63	4480.	4366.	4221.
64	4757.	4629.	4506.



FLASHLIGHT CONTROL 44 DEG 9/23/75

SAMPLE #	CANDLEPOWER VS TIME(MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
65	0.201	0.190	0.178	0.16	0.14	0.14	0.12	0.12	0.11	0.11	0.11	0.11
66	0.250	0.225	0.204	0.19	0.17	0.16	0.15	0.15	0.14	0.14	0.14	0.13
67	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	0.138	0.120	0.118	0.10	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.06
69	0.254	0.194	0.182	0.18	0.14	0.13	0.12	0.12	0.12	0.12	0.11	0.11
70	0.247	0.222	0.201	0.20	0.15	0.14	0.13	0.13	0.12	0.11	0.11	0.11

SAMPLE #	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION		
	AREA	AREA			A	B	B*X
65	39.9	43.4	1.389	19.0	0.140		-0.000123
66	48.5	57.1	1.759	19.5	0.175		-0.000150
67	0.3	-0.2	0.001	0.3	-0.000		0.000005
68	26.0	24.3	0.839	17.0	0.095		-0.000093
69	41.0	54.8	1.597	21.8	0.141		-0.000108
70	43.2	29.0	1.203	14.3	0.158		-0.000184

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE #	10 MIN	30 MIN	60 MIN
65	5930.	5785.	5570.
66	6333.	6098.	5896.
67	-119015	258.	258.
68	4980.	4942.	4671.
69	5981.	5843.	5780.
70	6288.	6060.	6077.

FLASHLIGHT CONTROL 40 DEG 9/23/75

CANDLEPOWER VS TIME(MIN)

SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
71	0.147	0.135	0.119	0.11	0.09	0.10	0.09	0.09	0.08	0.08	0.07	0.07
72	0.225	0.201	0.179	0.16	0.14	0.15	0.14	0.13	0.13	0.12	0.12	0.12
73	0.217	0.190	0.162	0.14	0.15	0.14	0.15	0.12	0.14	0.13	0.12	0.12
74	0.160	0.142	0.129	0.12	0.10	0.10	0.09	0.09	0.09	0.08	0.08	0.08
75	0.145	0.119	0.112	0.11	0.10	0.10	0.09	0.08	0.08	0.07	0.06	0.06
76	0.132	0.136	0.139	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11

SAMPLE#	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
					A	B * X
71	28.9	28.2	0.952	17.4	0.106	-0.000101
72	42.9	51.2	1.567	19.6	0.156	-0.000133
73	41.7	17.9	0.993	10.4	0.212	-0.000341
74	34.7	31.3	1.032	17.9	0.112	-0.000104
75	27.9	8.4	0.604	9.4	0.133	-0.000236
76	35.5	91.7	2.120	33.8	0.125	-0.000061

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
71	5202.	4967.	4833.
72	6657.	5759.	5588.
73	5430.	5540.	5235.
74	5308.	5113.	4920.
75	4507.	4840.	4753.
76	5224.	5272.	5149.

FLASHLIGHT CONTROL - AMBIENT - 9/19/75/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
77	0.130	0.110	0.101	0.11	0.10	0.09	0.09	0.08	0.08	0.07	0.07	0.06
78	0.071	0.077	0.064	0.06	0.05	0.05	0.06	0.06	0.06	0.07	0.06	0.06
79	0.231	0.191	0.174	0.18	0.13	0.13	0.12	0.12	0.11	0.09	0.09	0.09
80	0.121	0.106	0.091	0.08	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05
81	0.215	0.172	0.162	0.15	0.15	0.10	0.03	0.00	0.00	0.00	0.00	0.00
82	0.176	0.170	0.153	0.14	0.11	0.11	0.11	0.12	0.11	0.11	0.09	0.08

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
	AREA	AREA			A	B+X
77	27.0	20.1	0.784	14.6	0.185	-0.000119
78	18.7	-169.7	-2.516	-76.8	0.865	0.000014
79	39.0	23.0	1.033	13.4	0.144	-0.000178
80	20.6	12.0	0.545	13.1	0.079	-0.000101
81	21.6	0.1	0.361	4.5	0.034	-0.000125
82	35.6	10.3	0.765	9.0	0.187	-0.000345

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
77	4813.	4647.	4737.
78	4171.	3876.	3848.
79	5945.	5742.	5780.
80	4737.	4477.	4242.
81	5721.	5588.	5451.
82	5691.	5467.	5280.

FLASHLIGHT CONTROL AMBIENT 9/22/75

SAMPLE #	CANDLEPOWER VS TIME(MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
83	0.160	0.147	0.130	0.12	0.11	0.10	0.09	0.09	0.08	0.08	0.08	0.07
84	0.141	0.111	0.107	0.09	0.09	0.11	0.12	0.12	0.12	0.12	0.12	0.12
85	0.177	0.123	0.120	0.10	0.11	0.11	0.11	0.09	0.08	0.08	0.07	0.07
86	0.176	0.169	0.152	0.13	0.11	0.11	0.10	0.09	0.08	0.08	0.08	0.07
87	0.161	0.126	0.140	0.14	0.15	0.15	0.14	0.13	0.13	0.13	0.12	0.12
88	0.201	0.190	0.171	0.15	0.15	0.15	0.14	0.13	0.13	0.12	0.12	0.11

SAMPLE #	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
					A	B * X
83	30.2	24.1	0.905	15.6	0.112	-0.000120
84	34.2	135.0	2.834	42.7	0.136	-0.000053
85	24.6	15.0	0.745	12.0	0.122	-0.000169
86	32.2	33.1	1.089	19.1	0.106	-0.000092
87	40.1	50.8	1.515	19.4	0.158	-0.000135
88	42.2	40.1	1.372	16.9	0.159	-0.000157

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE #	10 MIN	30 MIN	60 MIN
83	5379.	5131.	4977.
84	4833.	4750.	4539.
85	5026.	4980.	4716.
86	5672.	5456.	5169.
87	5076.	5289.	5277.
88	5939.	5706.	5493.

FLASHLIGHT CONTROL 110 DEG 9/24/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
89	0.216	0.187	0.148	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.10	0.09
90	0.198	0.178	0.163	0.15	0.14	0.13	0.12	0.11	0.11	0.11	0.10	0.09
91	0.352	0.270	0.236	0.22	0.20	0.18	0.17	0.16	0.15	0.14	0.14	0.13
92	0.126	0.143	0.131	0.12	0.11	0.09	0.08	0.08	0.08	0.07	0.06	0.05
93	0.105	0.085	0.099	0.09	0.08	0.07	0.07	0.06	0.07	0.06	0.06	0.06
94	0.215	0.196	0.173	0.16	0.14	0.14	0.13	0.12	0.12	0.11	0.11	0.11

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION		
	AREA	AREA			A	+ B	X
89	37.7	38.5	1.289	18.2	0.134	-0.000122	
90	36.0	36.5	1.240	17.3	0.130	-0.000134	
91	53.8	36.1	1.499	14.2	0.201	-0.000236	
92	25.4	6.8	0.587	8.8	0.137	-0.000261	
93	22.7	14.6	0.622	13.4	0.091	-0.000114	
94	40.9	42.4	1.388	18.1	0.148	-0.000137	

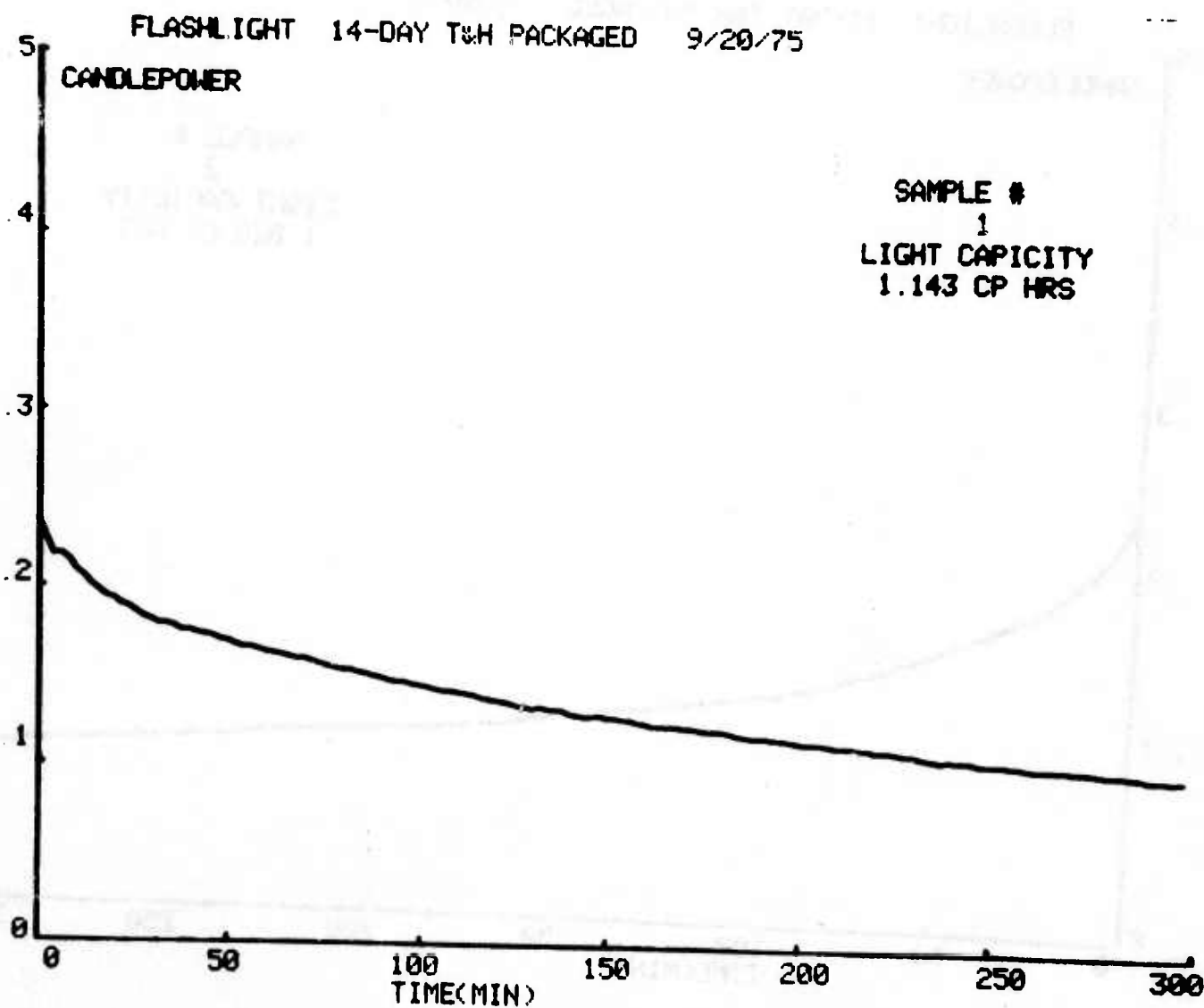
ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
89	5900.	5395.	5374.
90	5787.	5595.	5382.
91	6769.	5441.	6258.
92	5319.	5146.	4904.
93	4342.	4619.	4608.
94	6005.	5725.	5496.

FLASHLIGHT CONTROL 110 DEG 9/24/75

CANDLEPOWER VS TIME(MIN)												
SAMPLE#	2	10	30	60	90	120	150	180	210	240	270	298
95	0.209	0.155	0.126	0.11	0.10	0.09	0.07	0.07	0.07	0.07	0.07	0.07
96	0.241	0.207	0.197	0.17	0.16	0.14	0.13	0.13	0.13	0.12	0.11	0.11
97	0.208	0.183	0.162	0.14	0.14	0.14	0.13	0.13	0.12	0.11	0.11	0.11
98	0.186	0.168	0.149	0.13	0.12	0.12	0.11	0.11	0.10	0.09	0.09	0.09
99	0.153	0.145	0.128	0.12	0.11	0.12	0.13	0.13	0.13	0.12	0.12	0.12
100	0.230	0.224	0.213	0.19	0.19	0.17	0.12	0.11	0.11	0.10	0.09	0.09

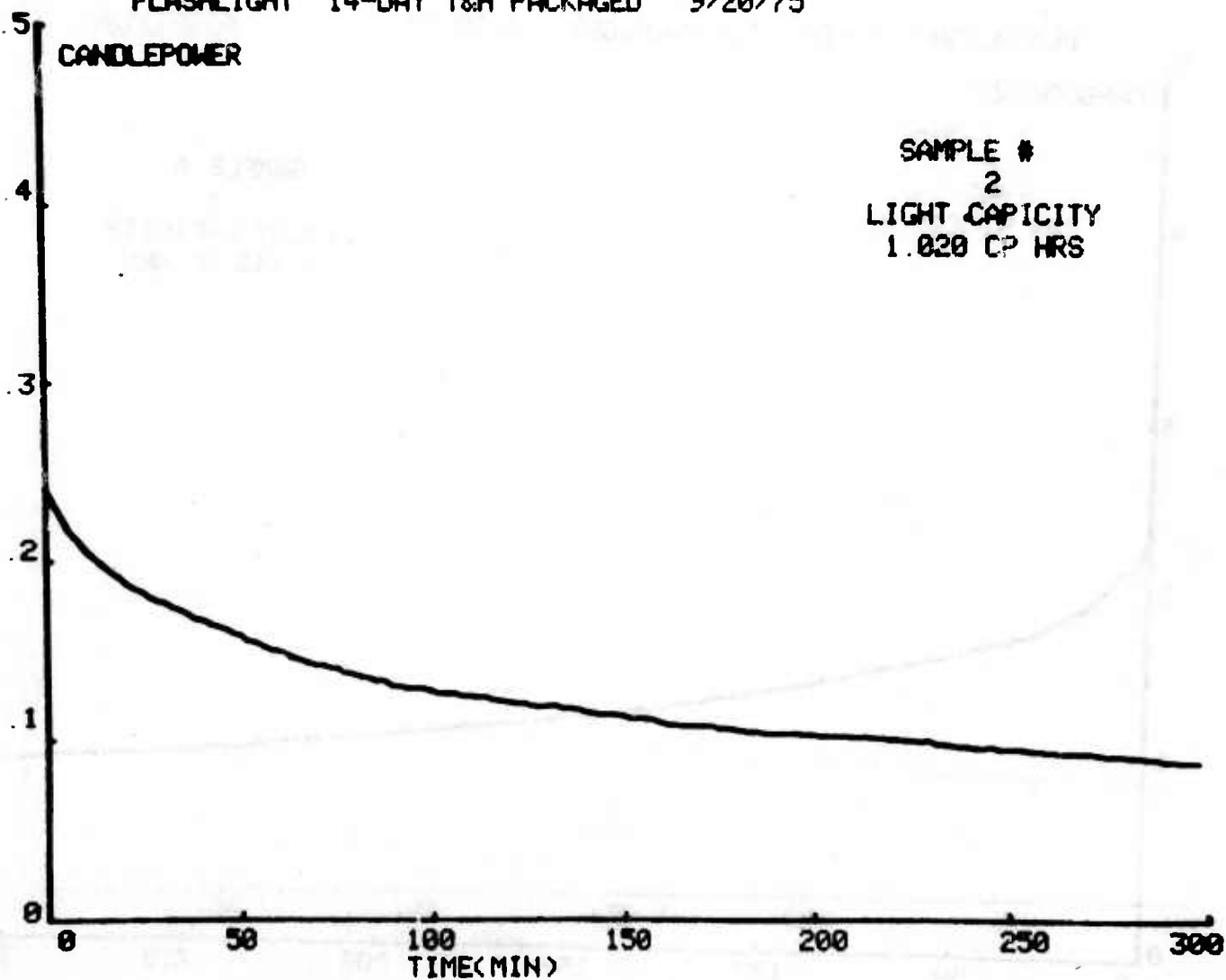
SAMPLE#	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (CP HRS)	EST TIME OUT (HRS)	PREDICTION EQUATION	
					A	B * X
95	27.8	44.1	1.198	25.9	0.086	-0.000056
96	43.6	32.4	1.267	14.9	0.162	-0.000181
97	40.0	45.0	1.416	18.9	0.146	-0.000129
98	34.6	44.2	1.313	20.8	0.122	-0.000097
99	37.4	62.7	1.668	22.6	0.152	-0.000112
100	43.4	31.0	1.239	16.0	0.136	-0.000141

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
95	5496.	5078.	4784.
96	6124.	6012.	5749.
97	5855.	5590.	5300.
98	5660.	5409.	5152.
99	5355.	5107.	5044.
100	6323.	6186.	5880.



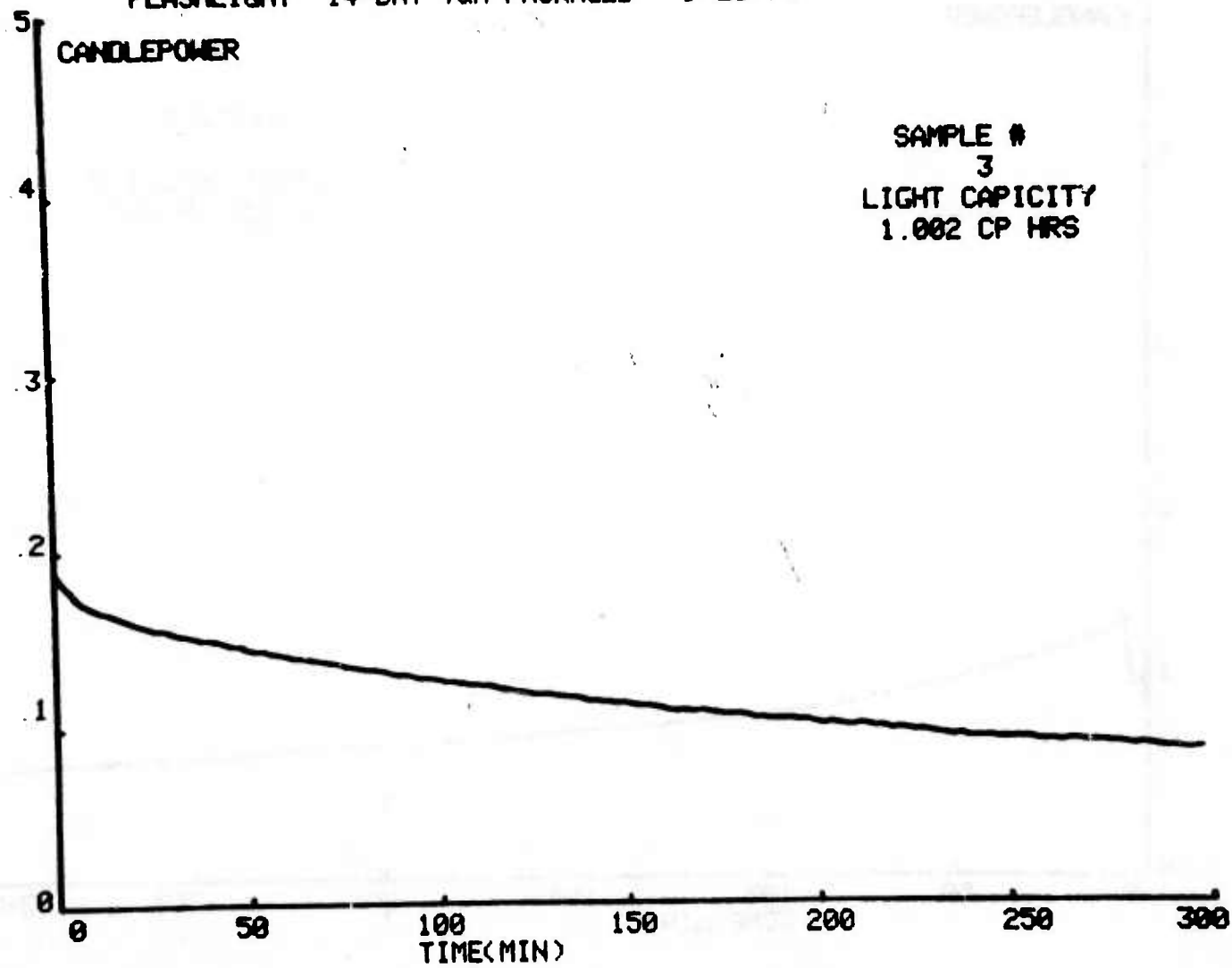


FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

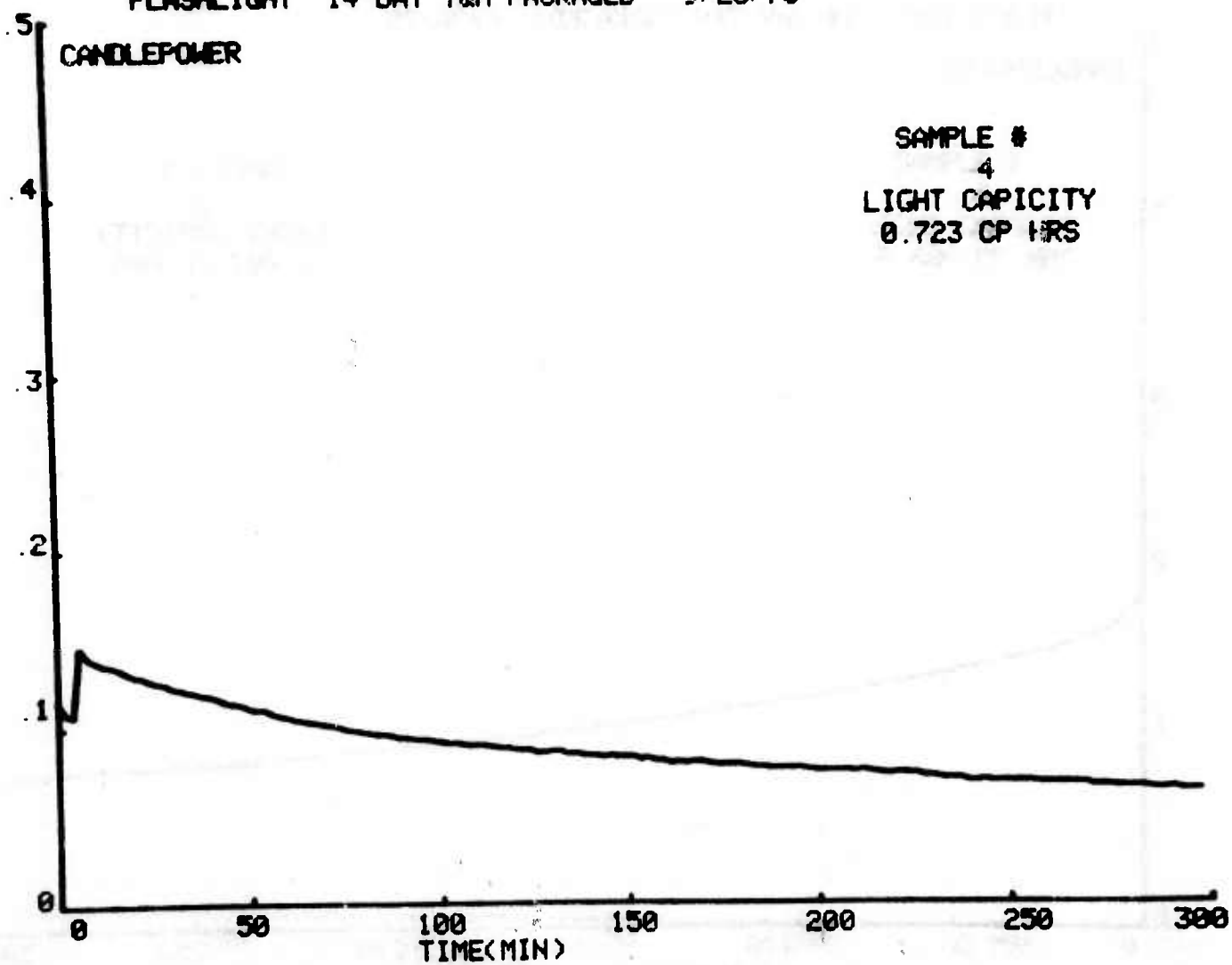


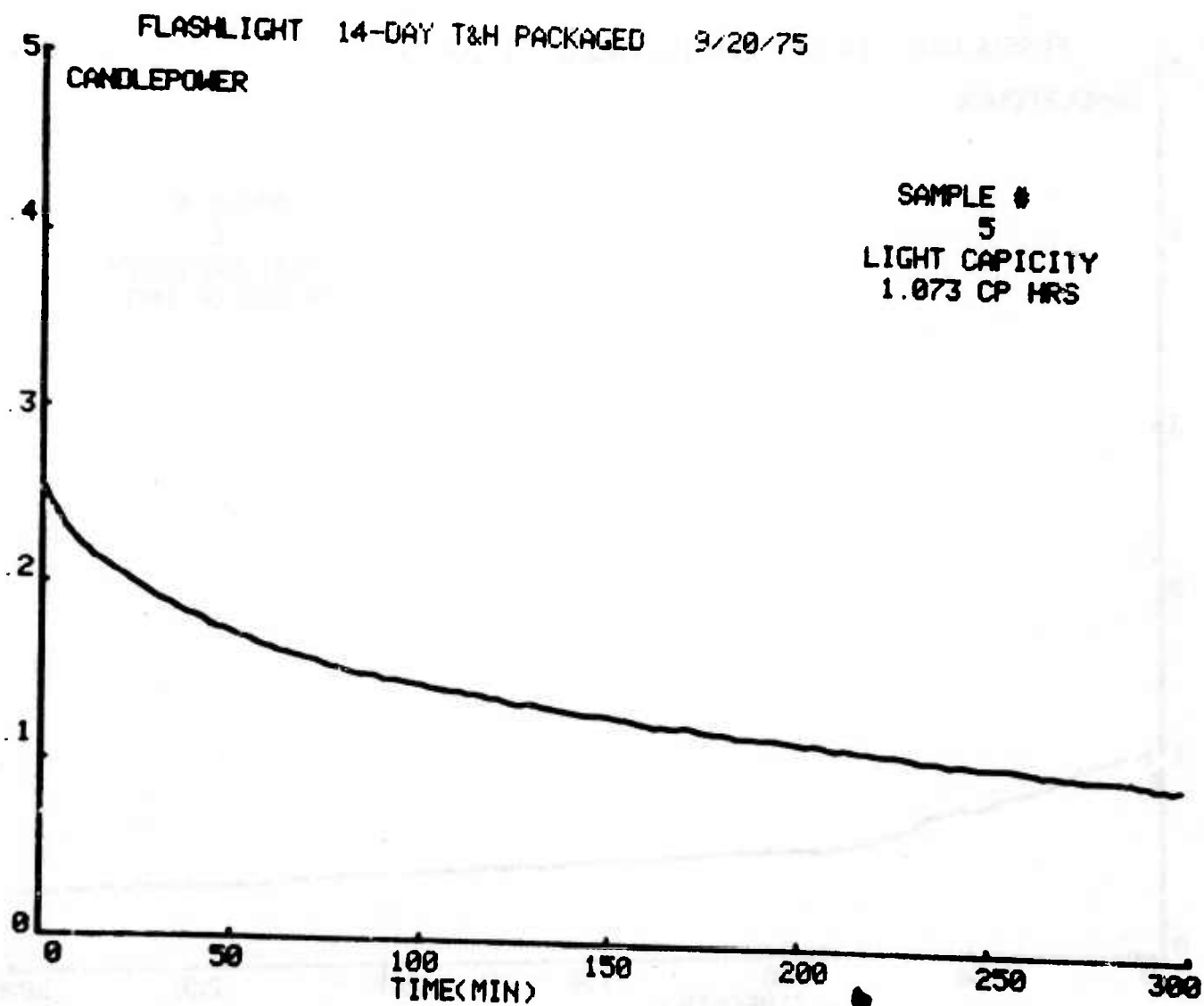


FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75



FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

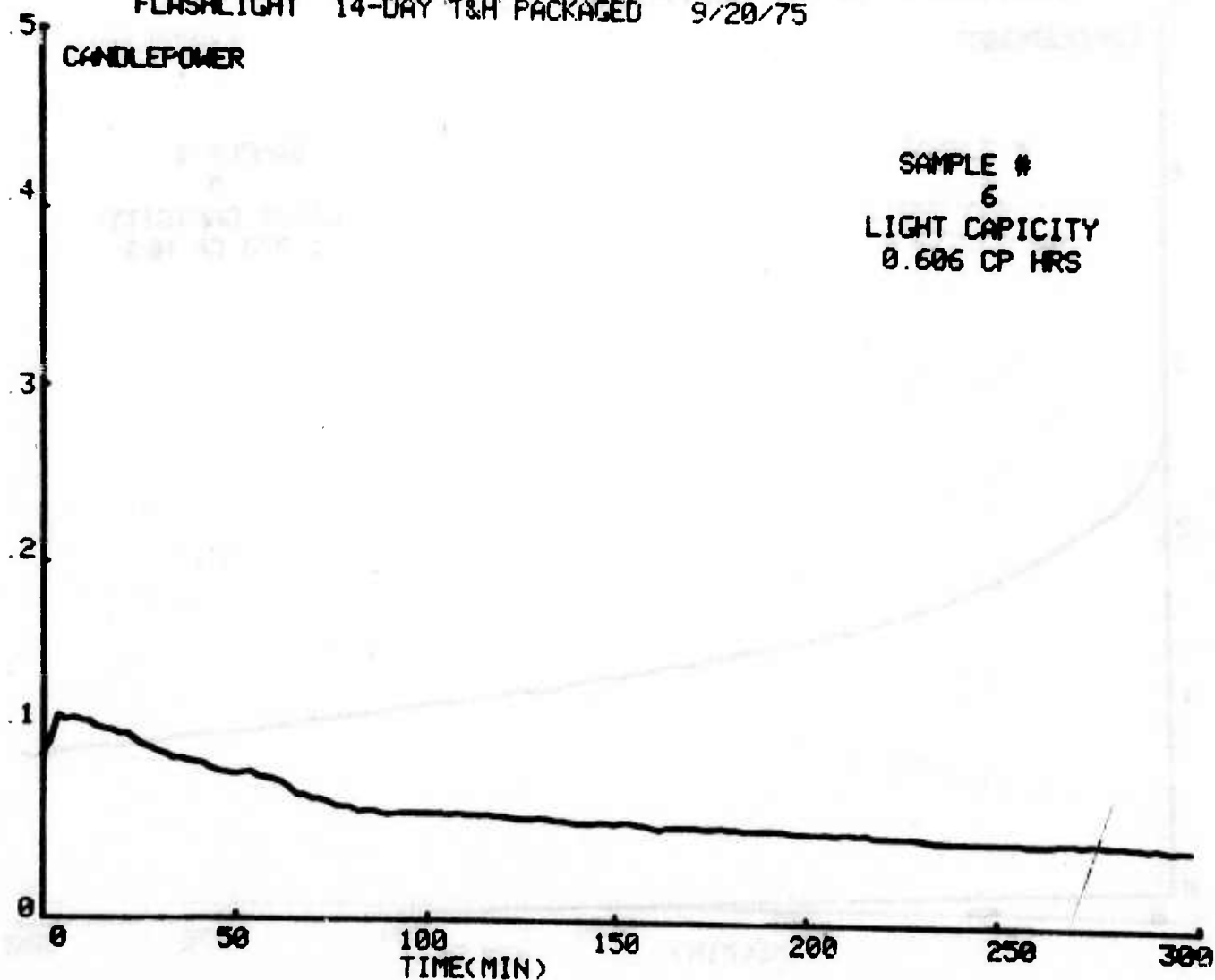


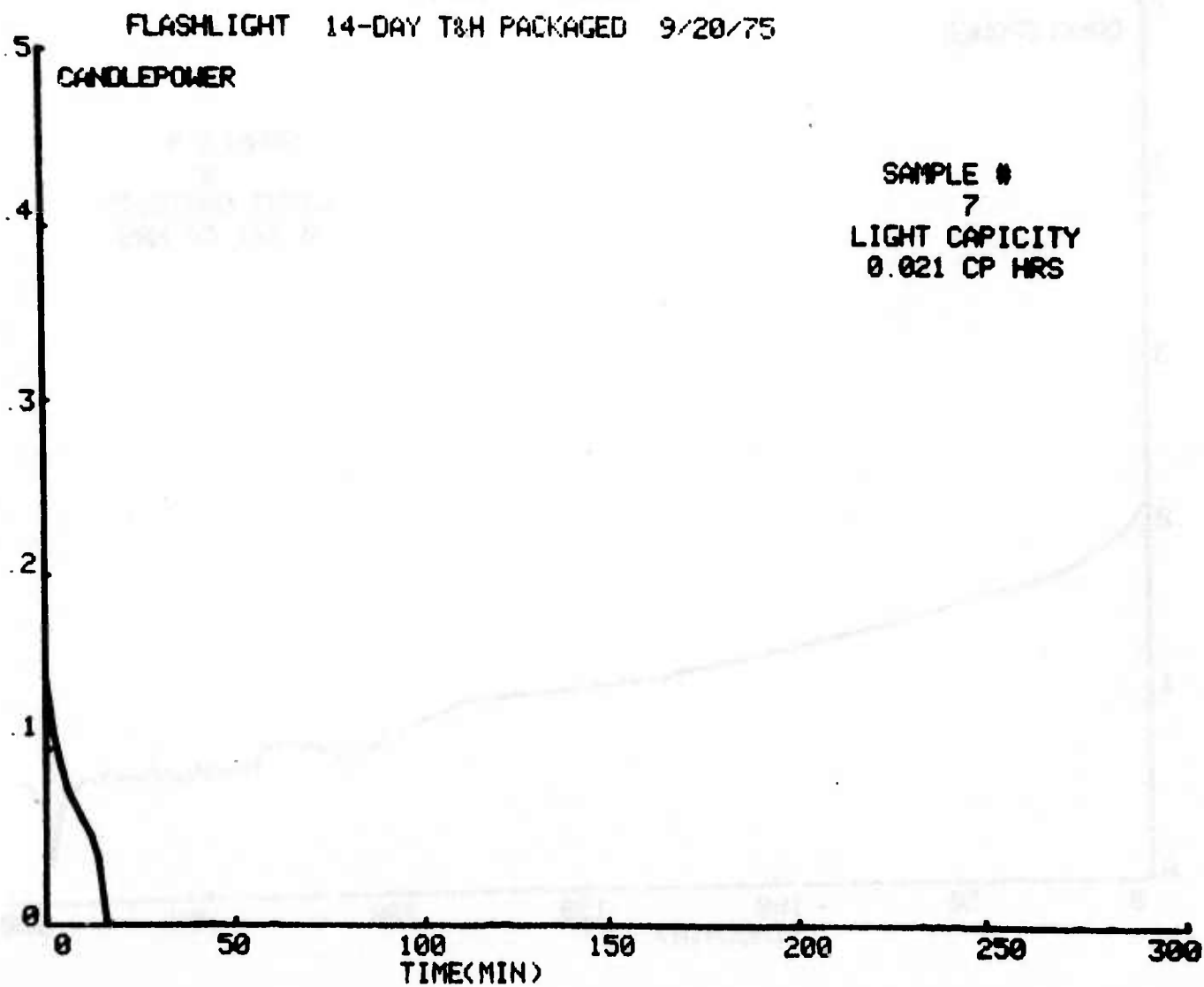


FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

CANDLEPOWER

SAMPLE #  
6  
LIGHT CAPACITY  
0.606 CP HRS

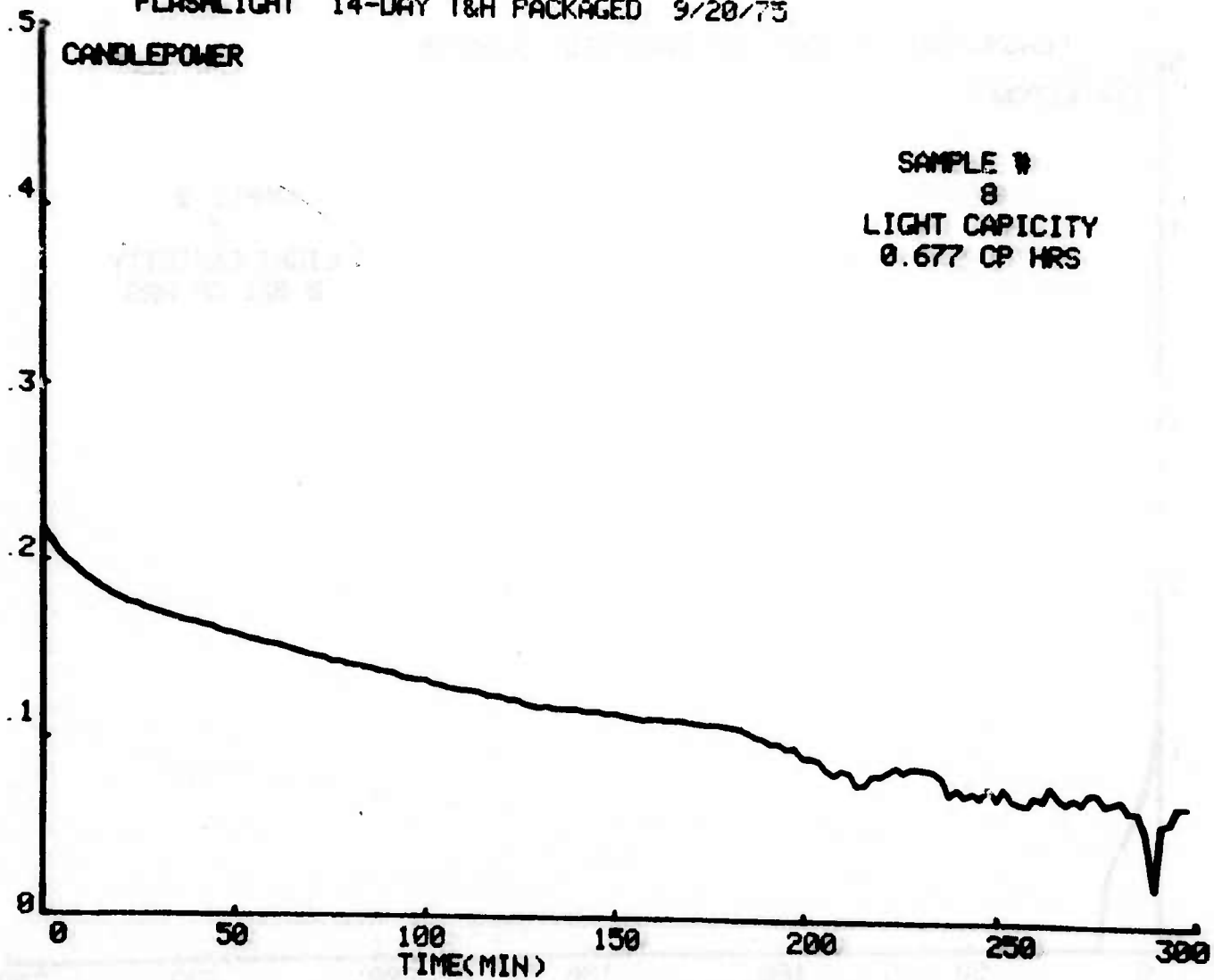




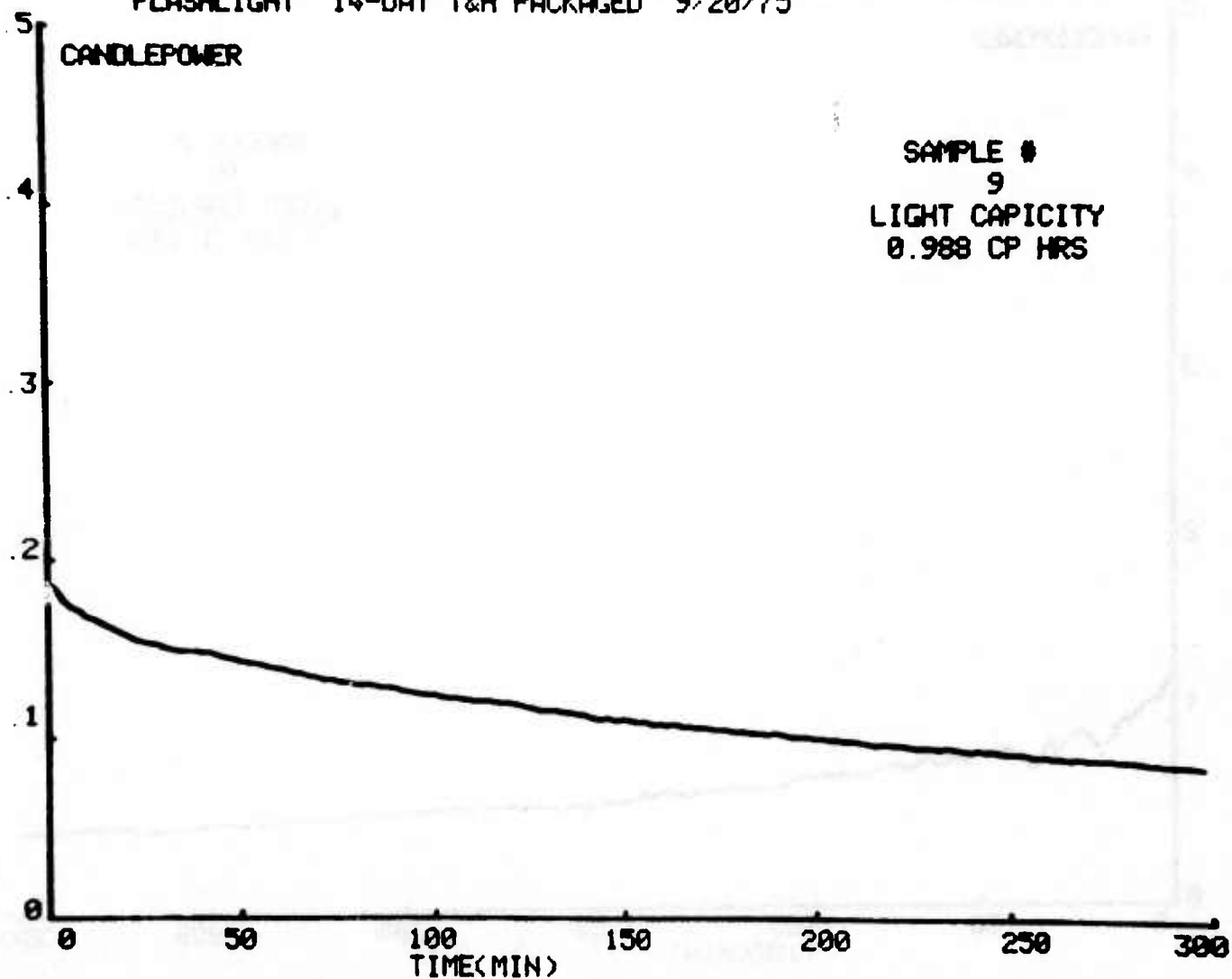
FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

CANDLEPOWER

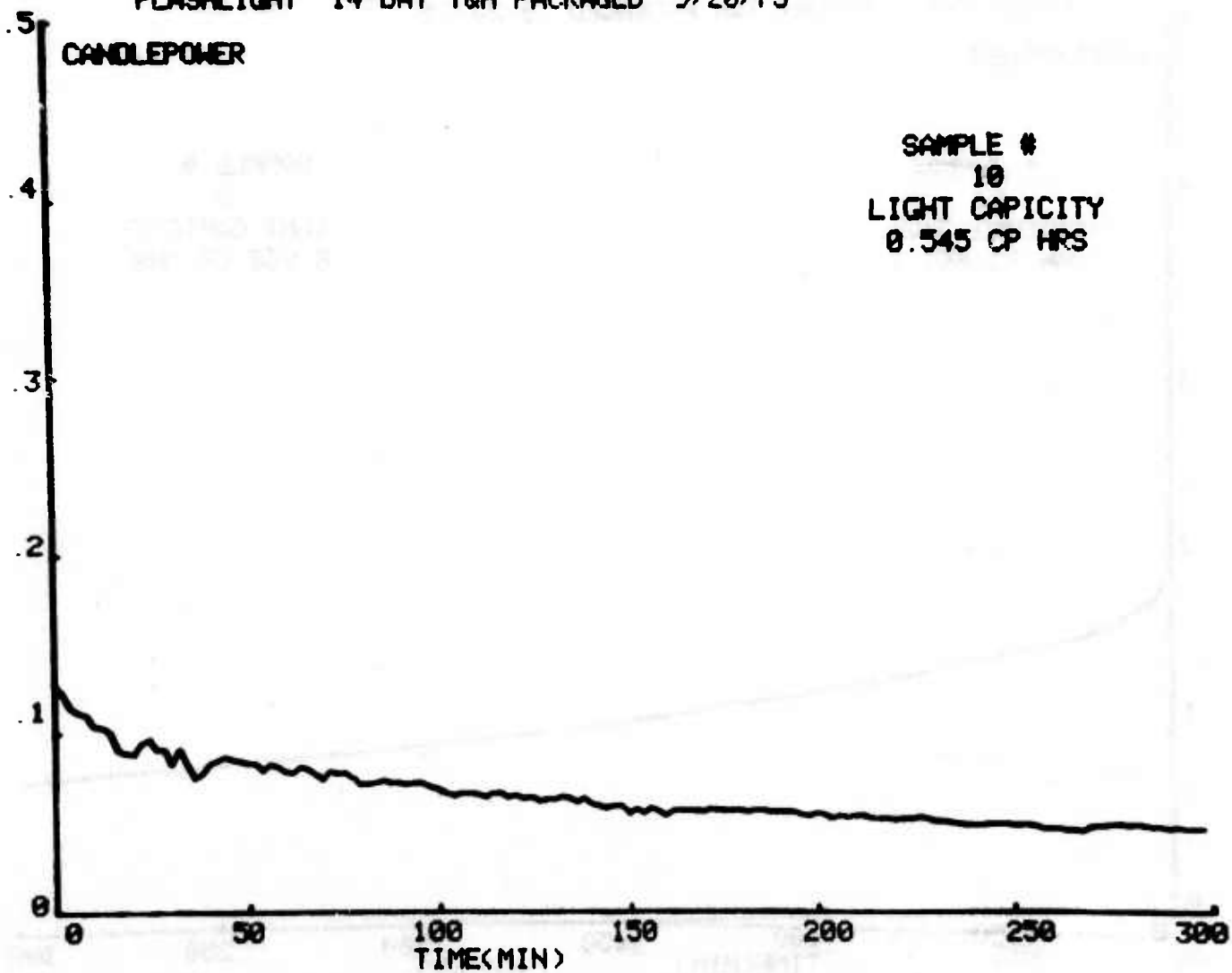
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8  
LIGHT CAPACITY  
0.677 CP HRS



FLASHLIGHT 14-DAY T&H PACKAGED 9/20/75

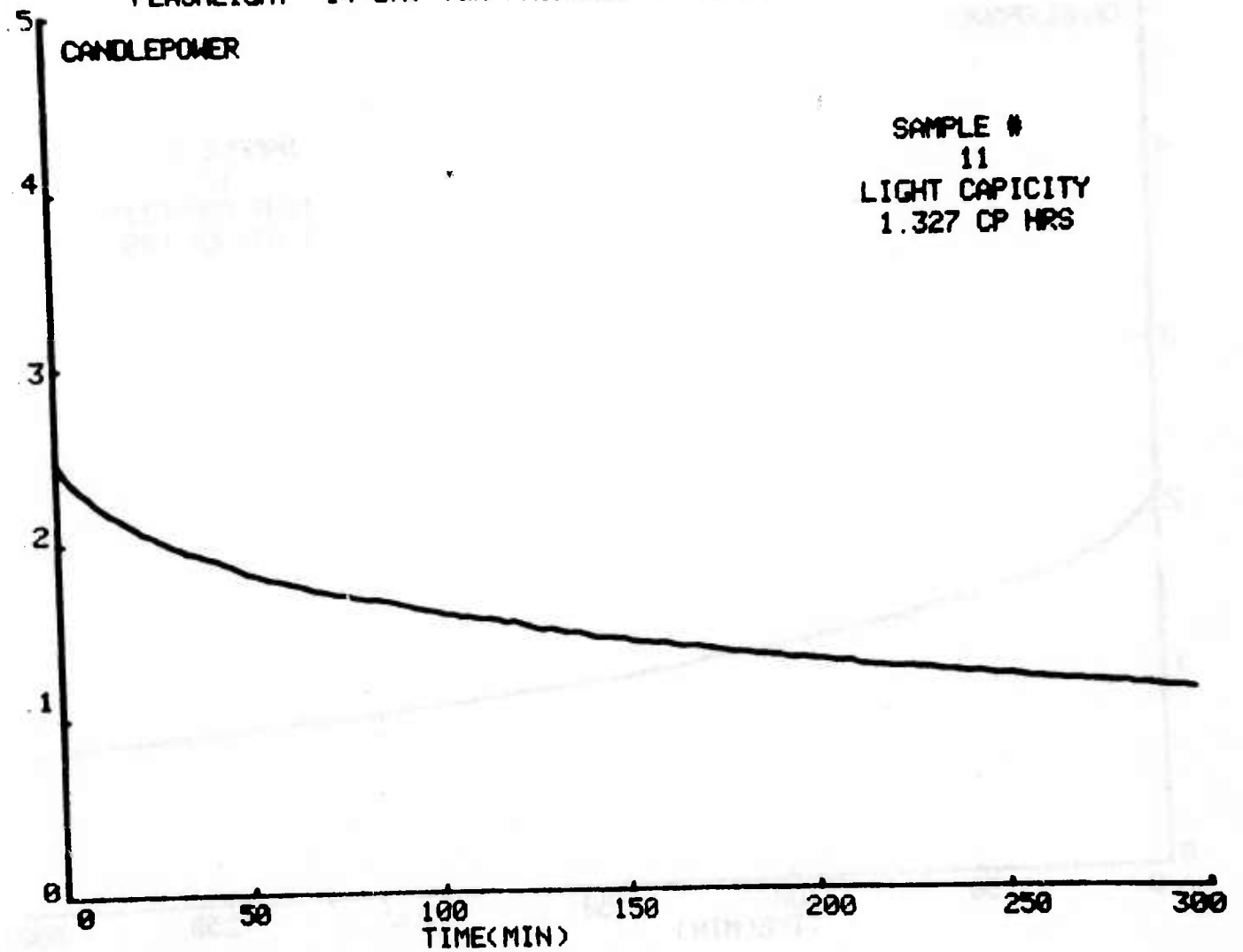


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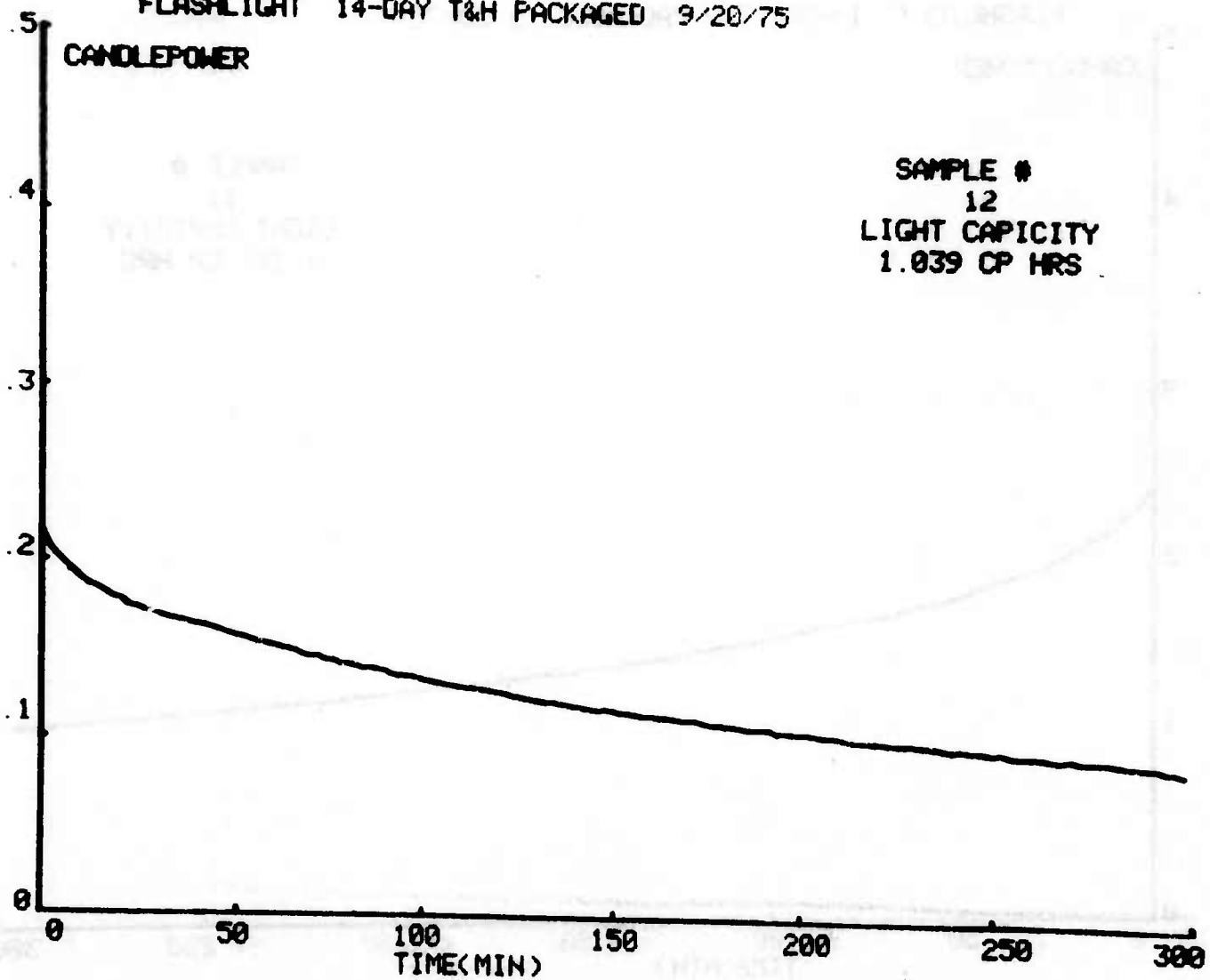
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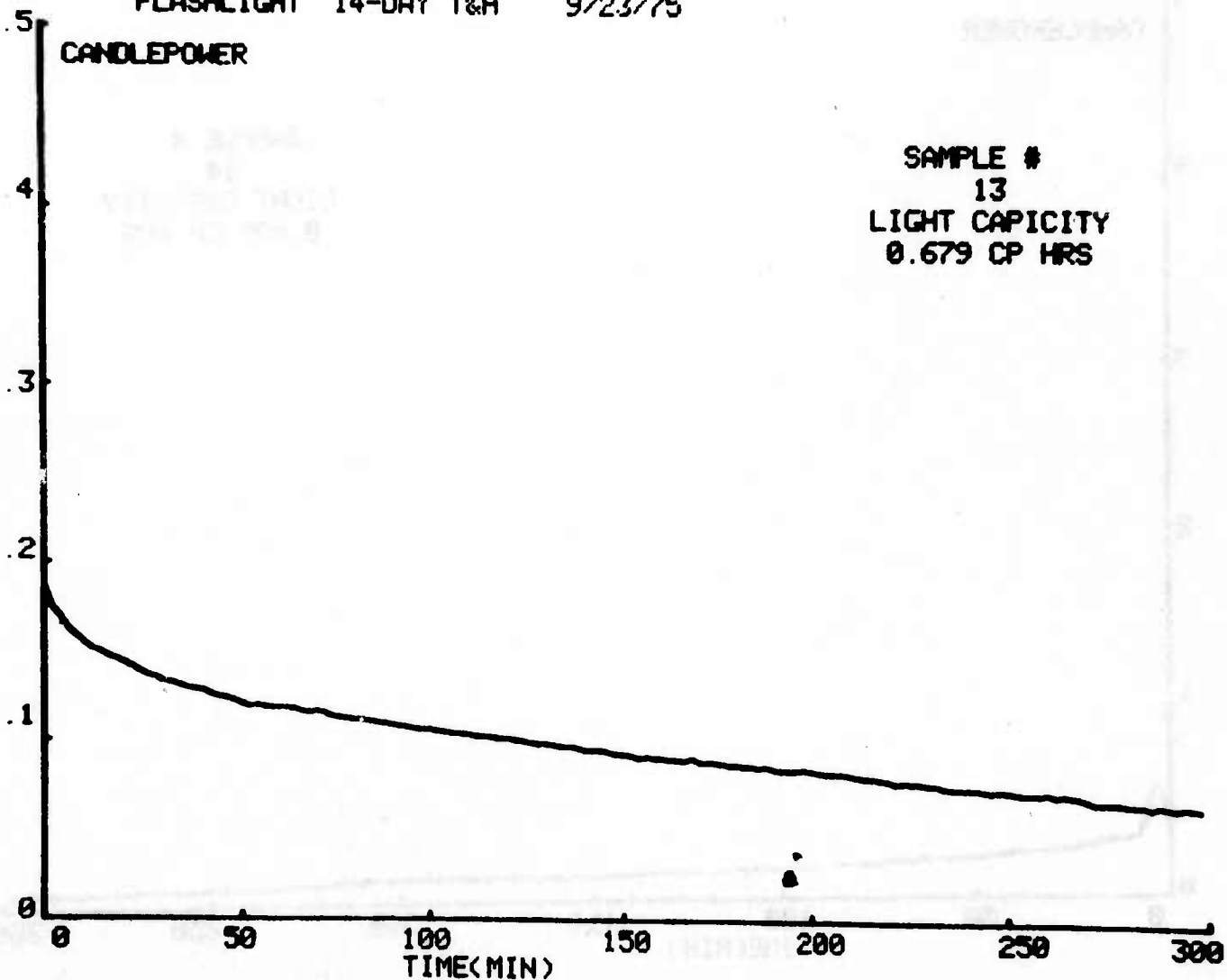
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CANDLEPOWER

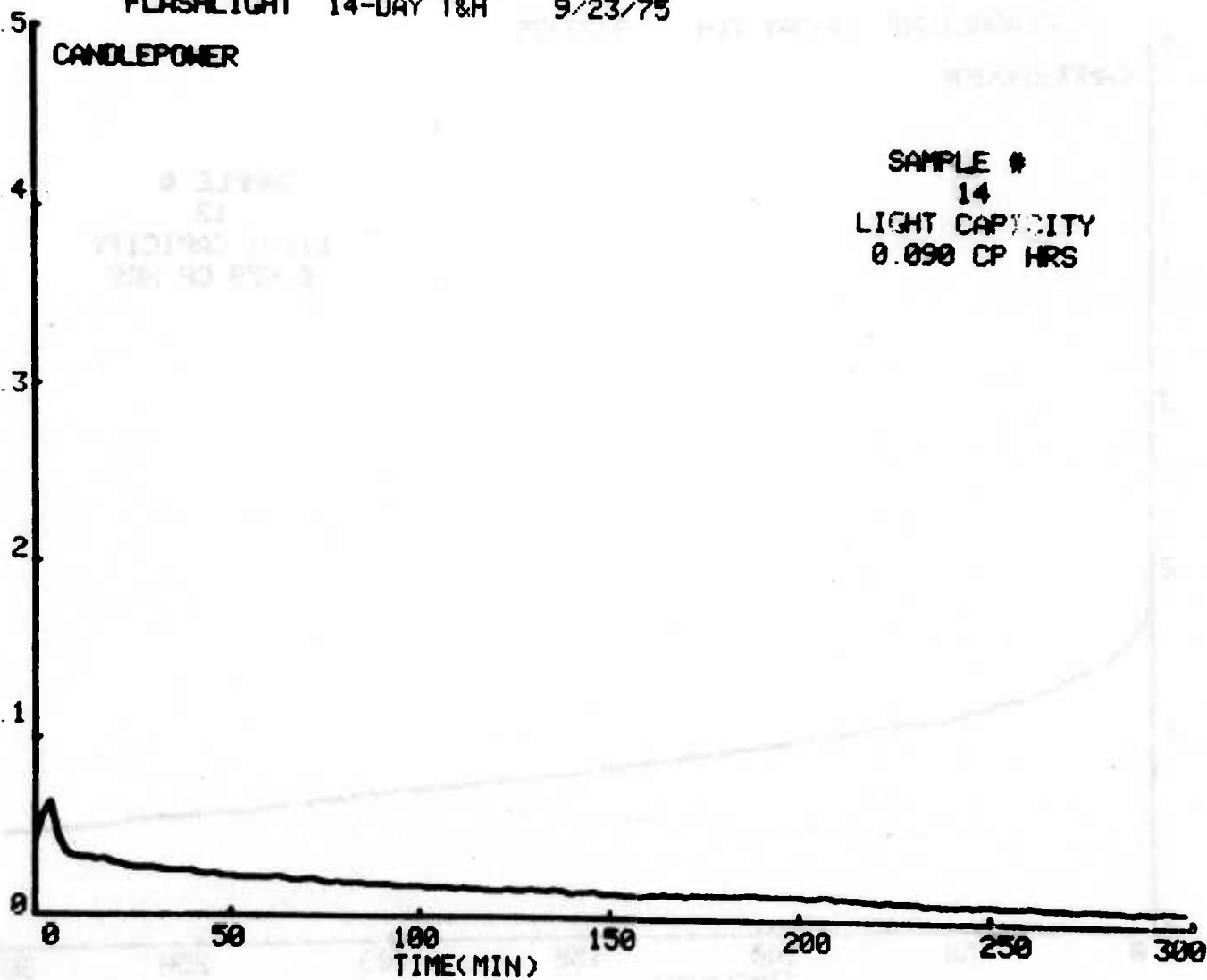
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12  
LIGHT CAPACITY  
1.039 CP HRS

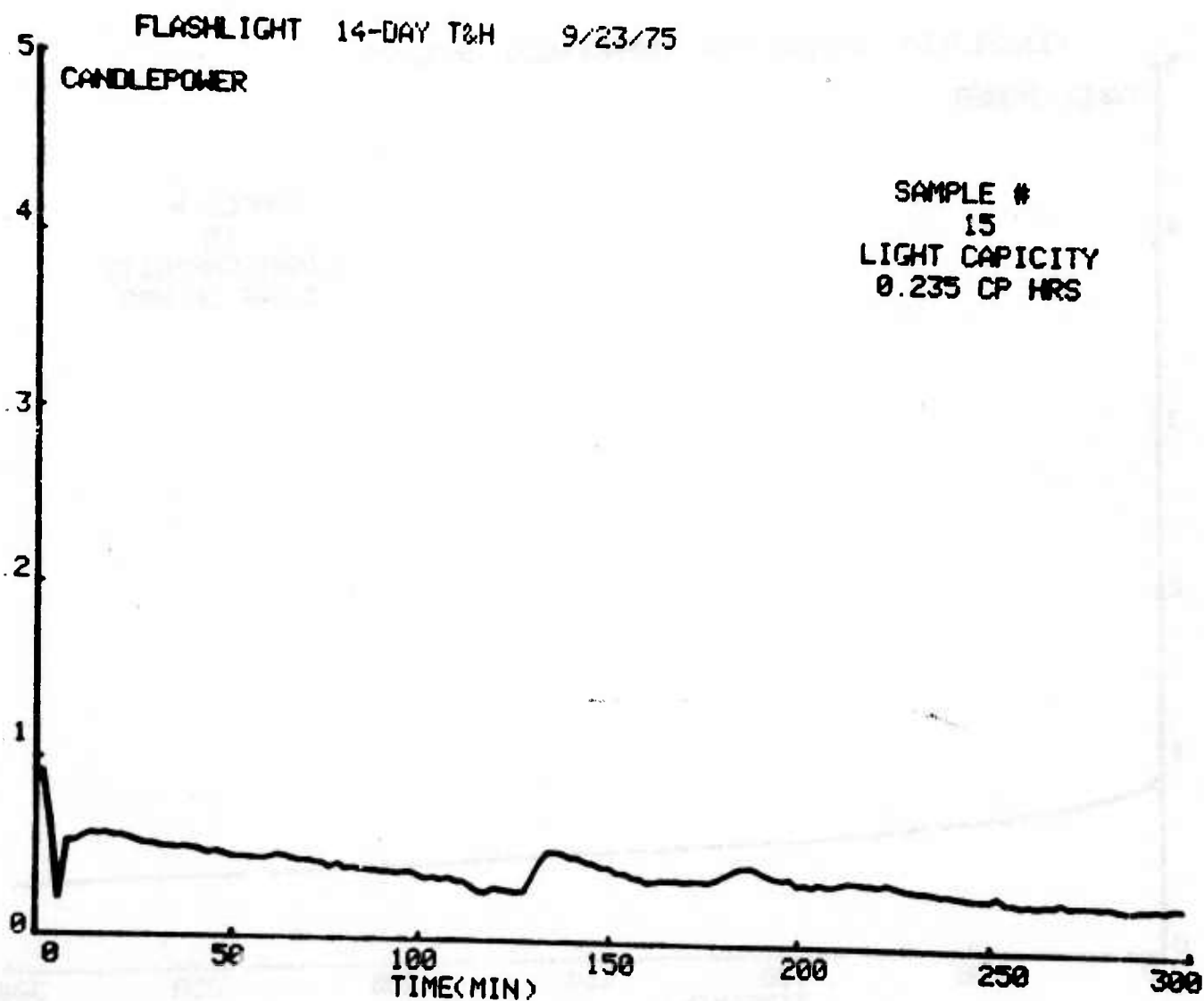


FLASHLIGHT 14-DAY T&H 9/23/75



FLASHLIGHT 14-DAY T&H 9/23/75

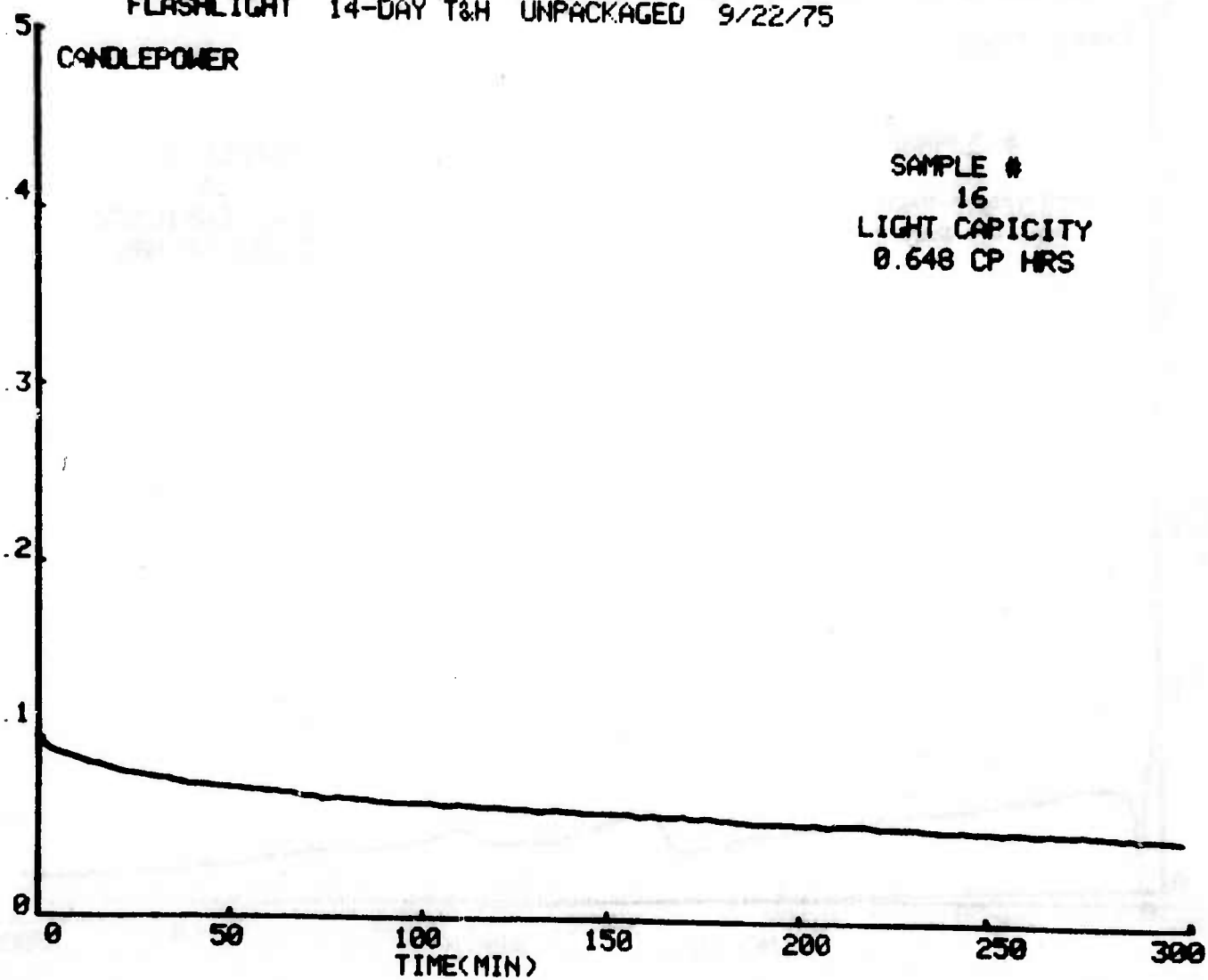


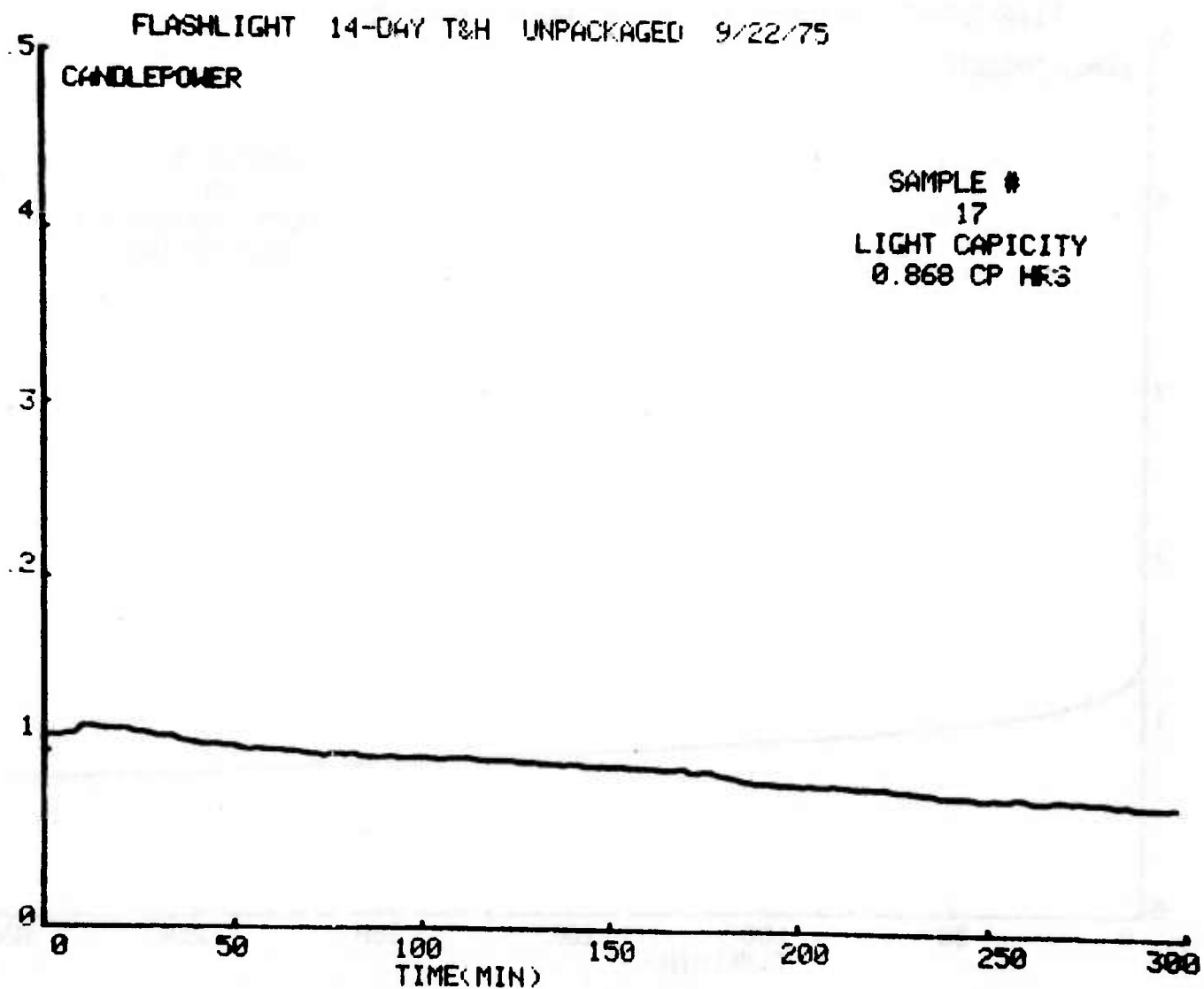


FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75

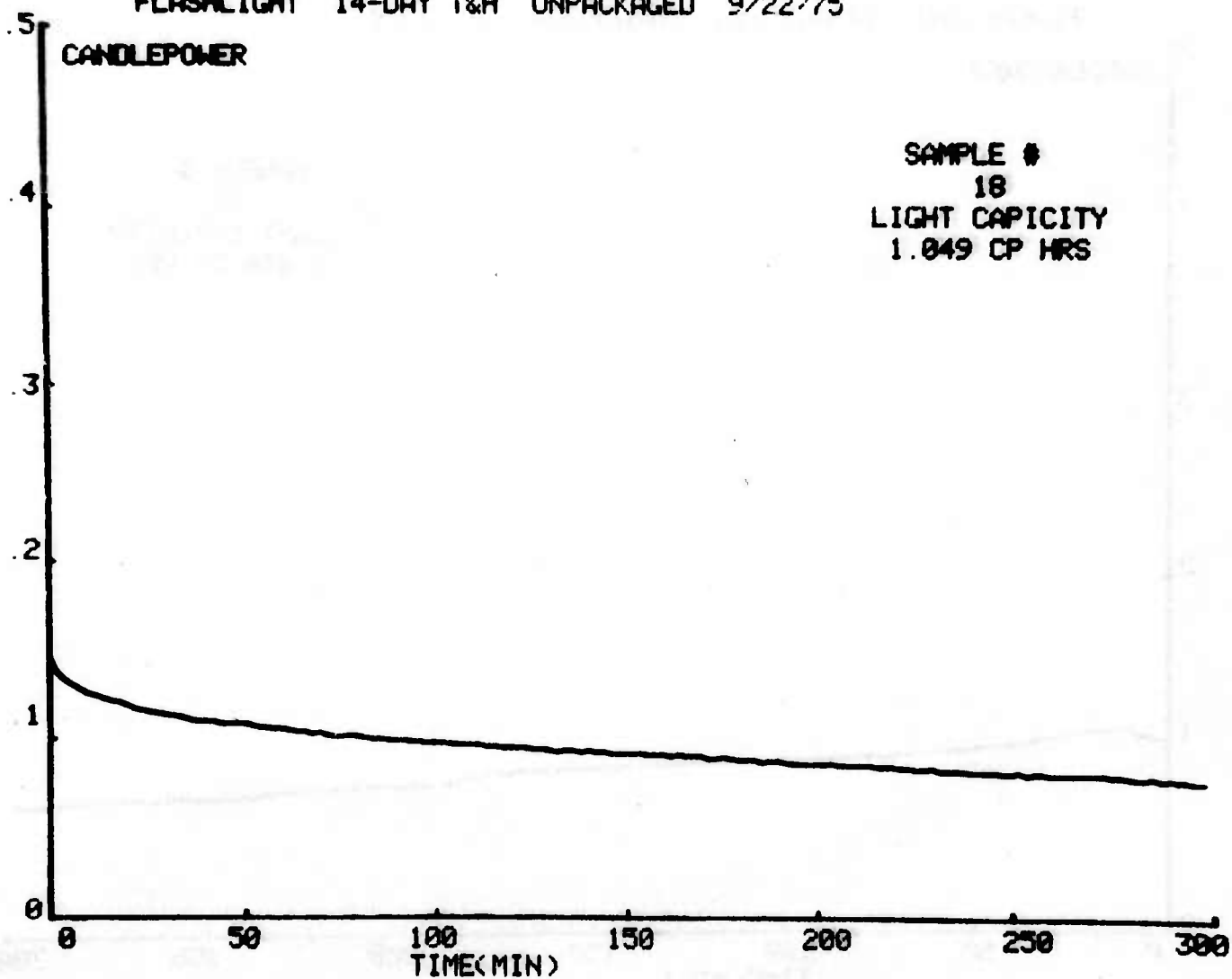
CANDLEPOWER

SAMPLE #  
16  
LIGHT CAPACITY  
0.648 CP HRS



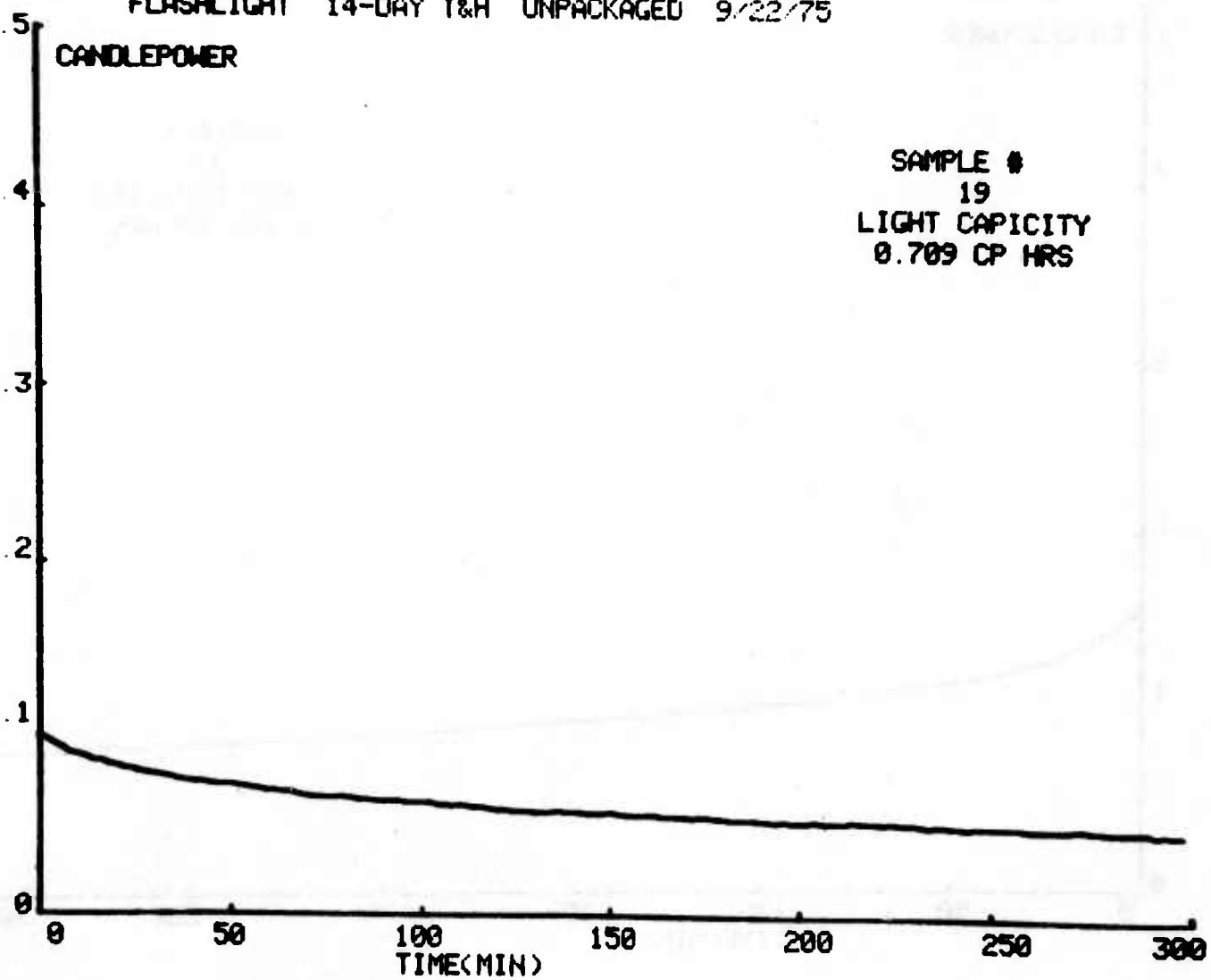


FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75





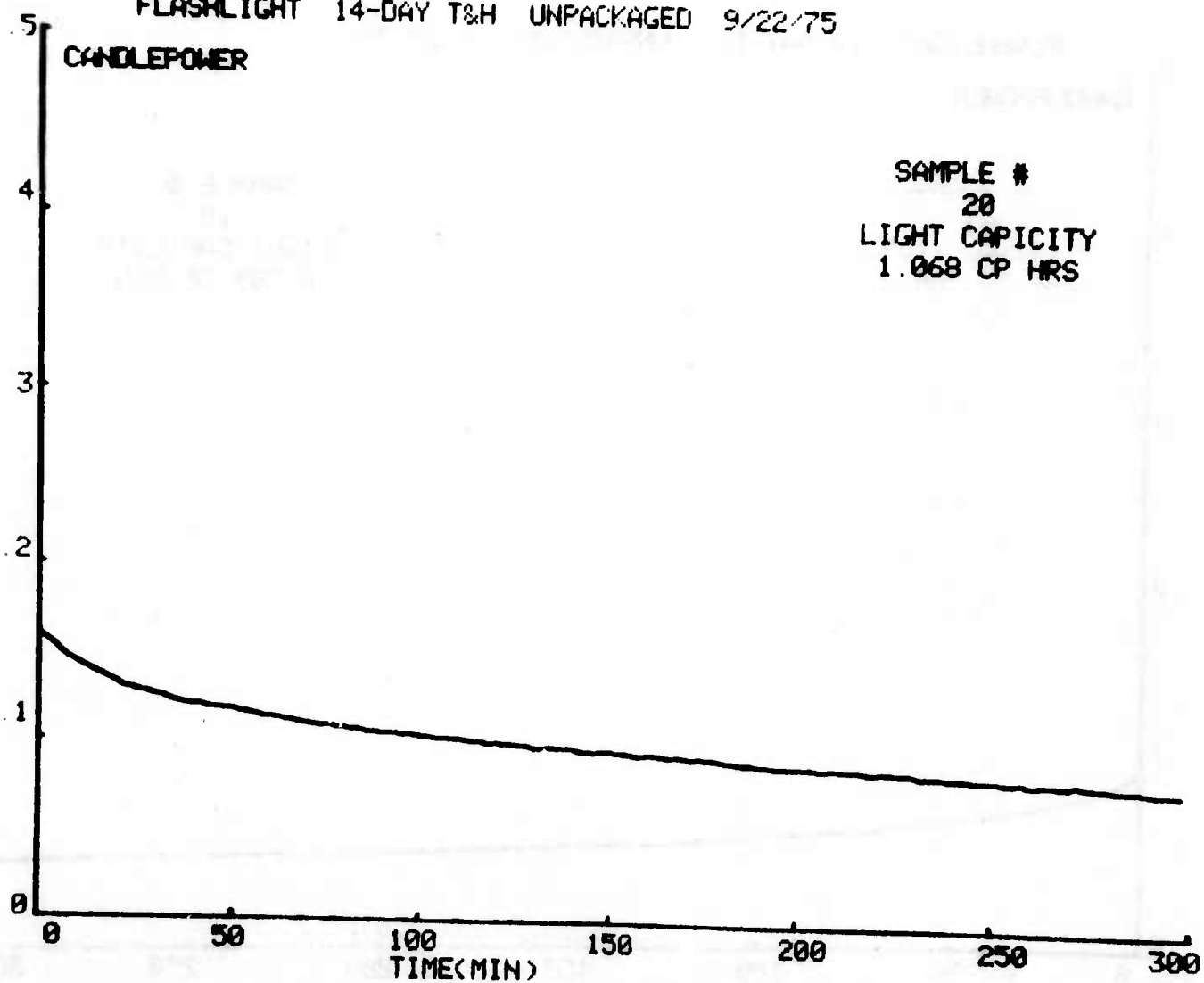
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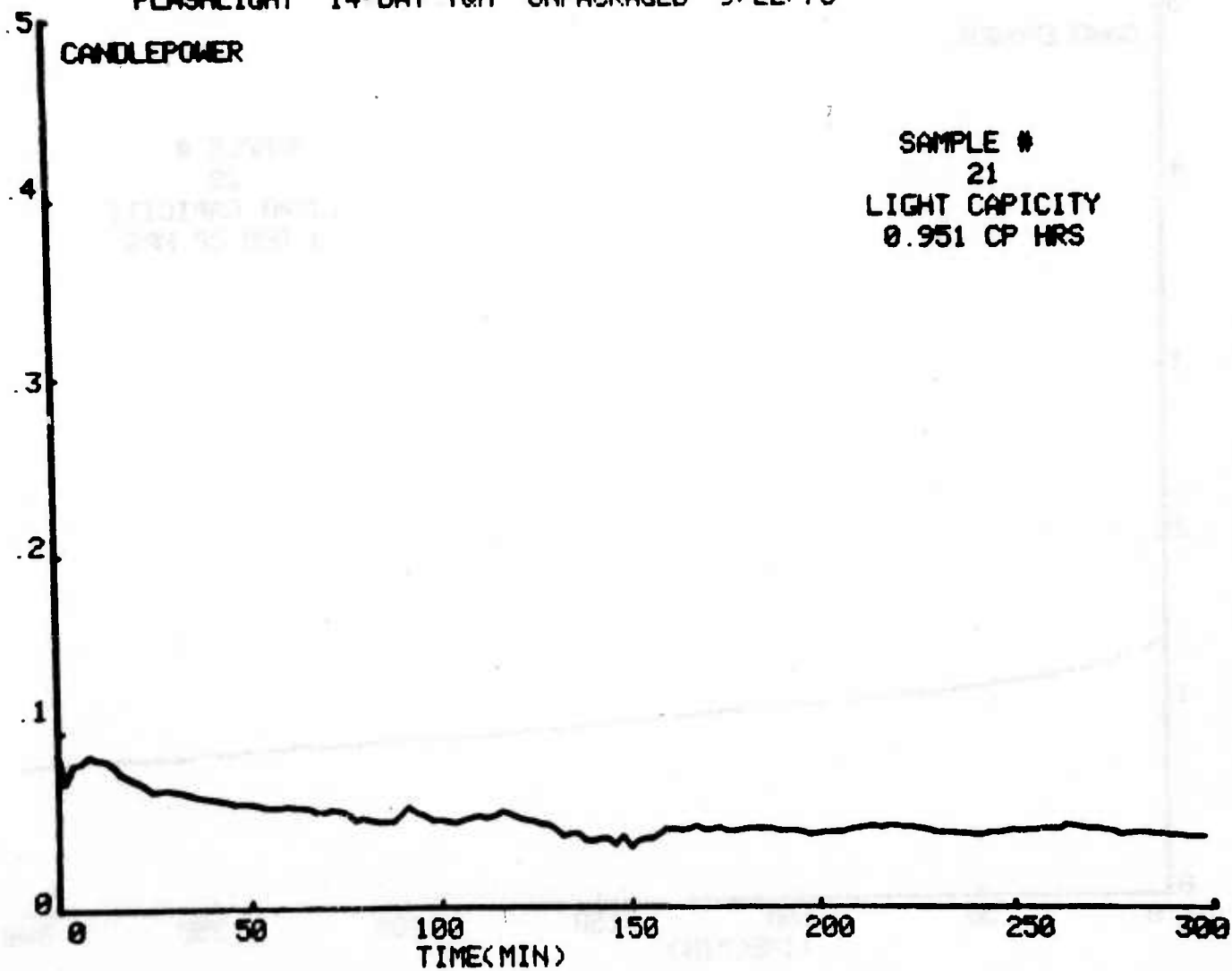
FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75

CANDLEPOWER

SAMPLE #  
20  
LIGHT CAPACITY  
1.068 CP HRS



FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75



FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75

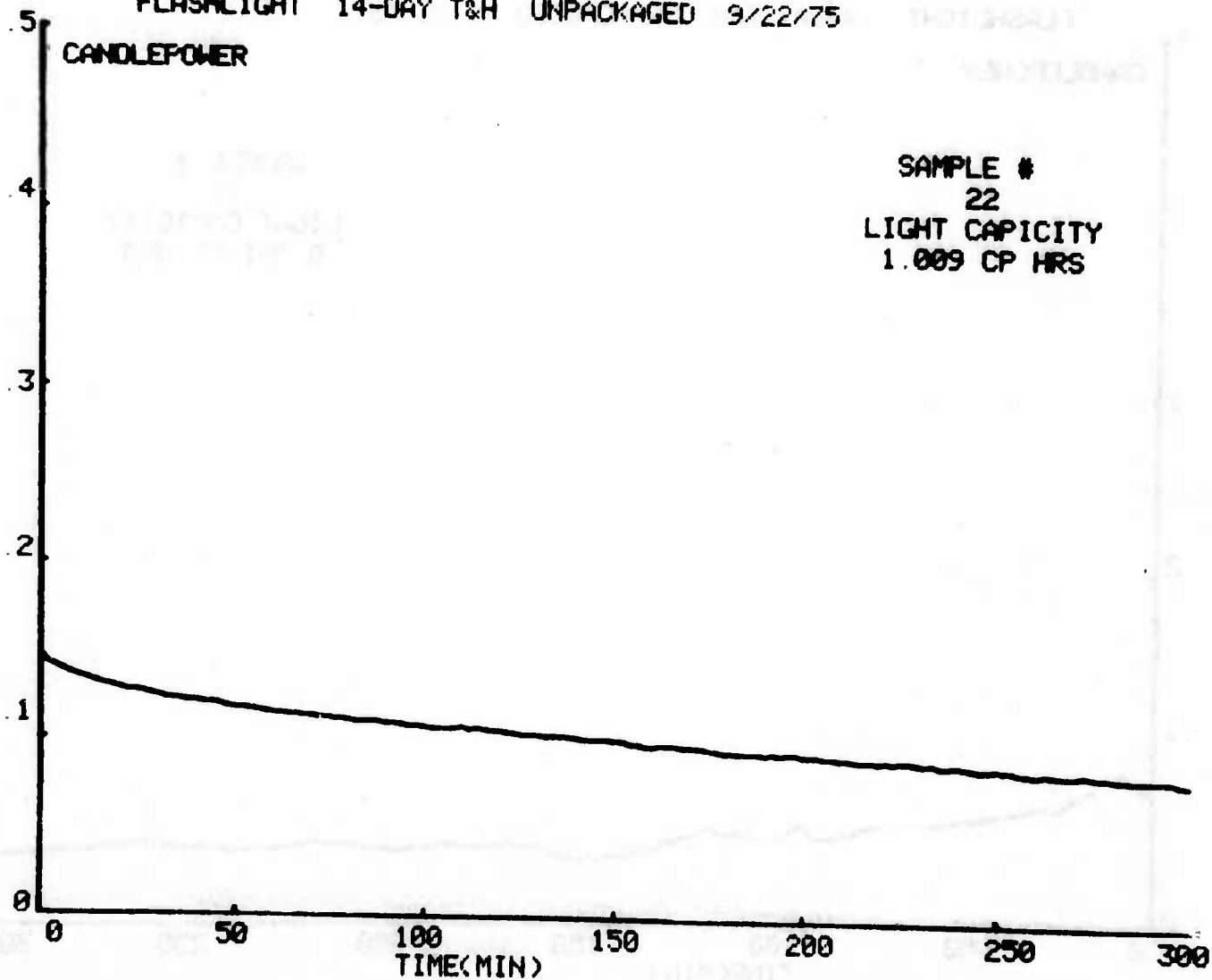
CANDLEPOWER

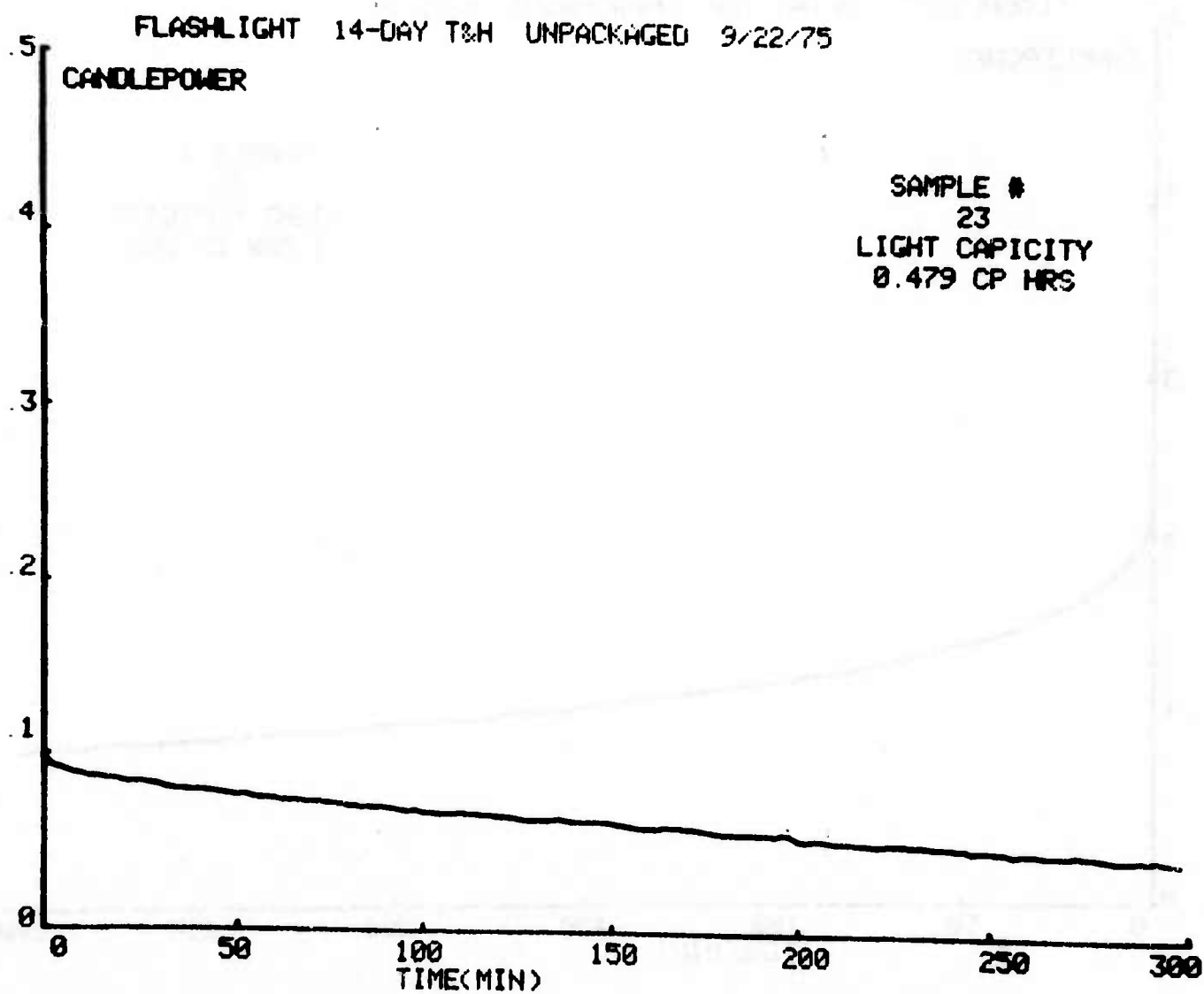
SAMPLE #

22

LIGHT CAPACITY

1.009 CP HRS

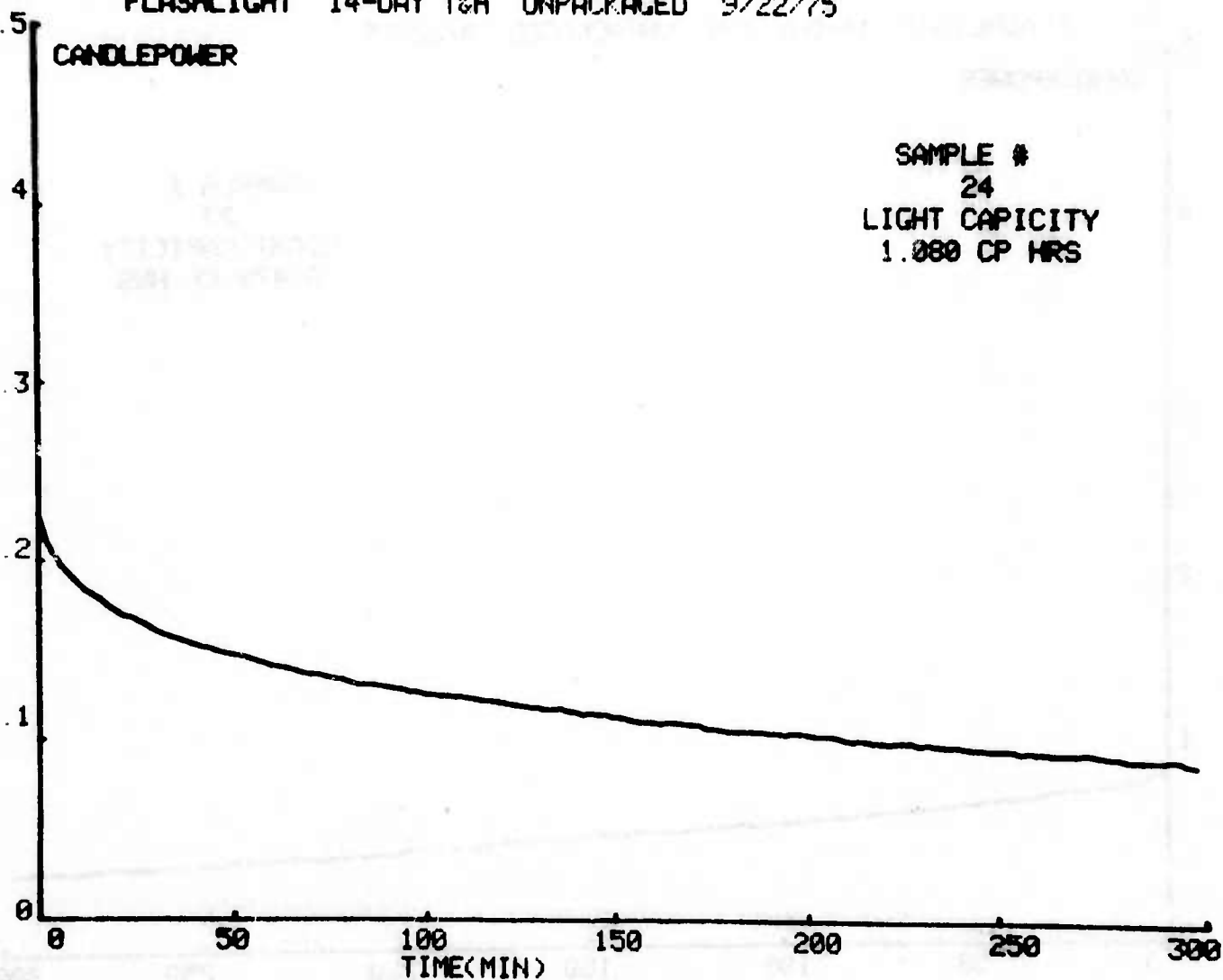


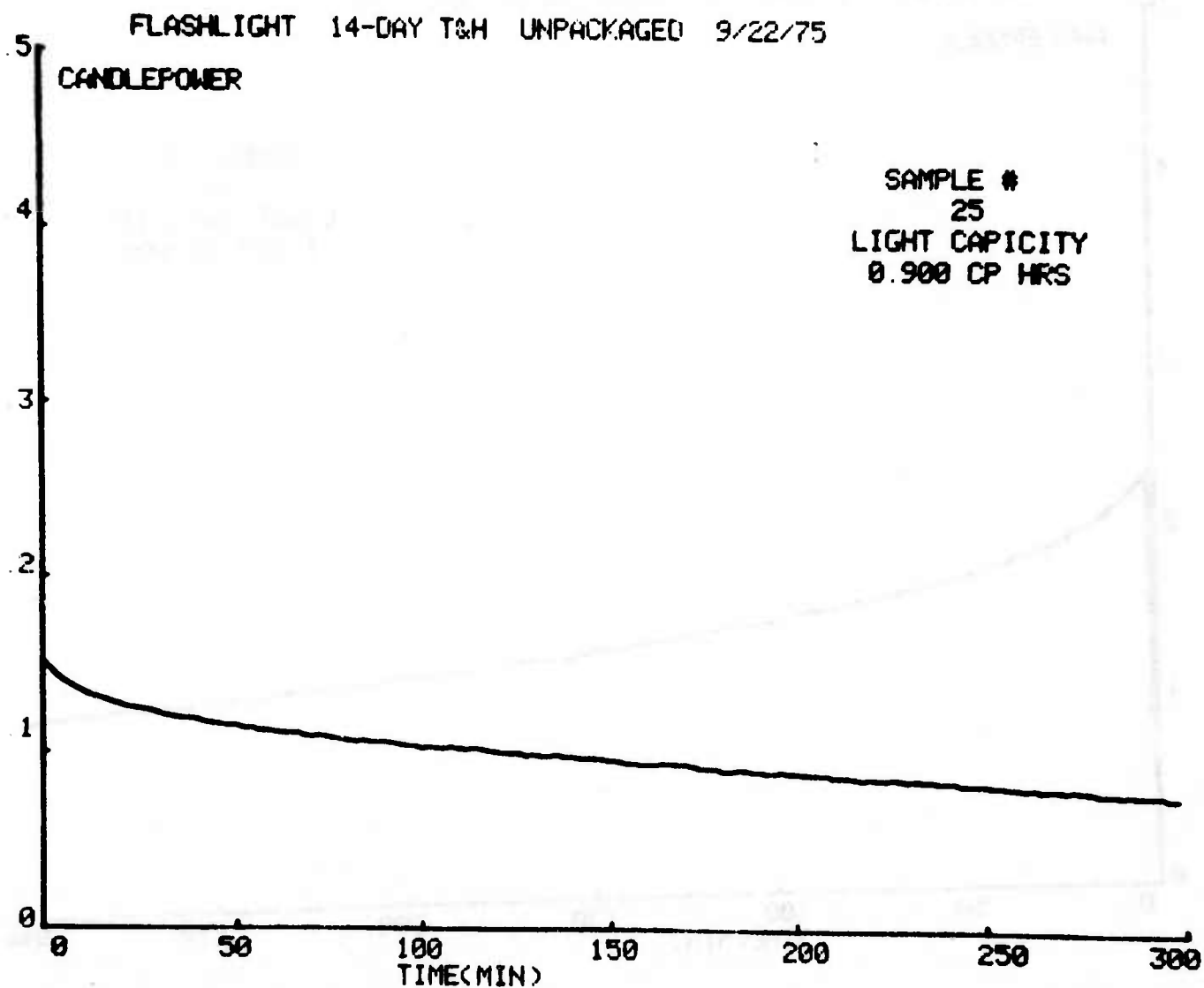


FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75

CANDLEPOWER

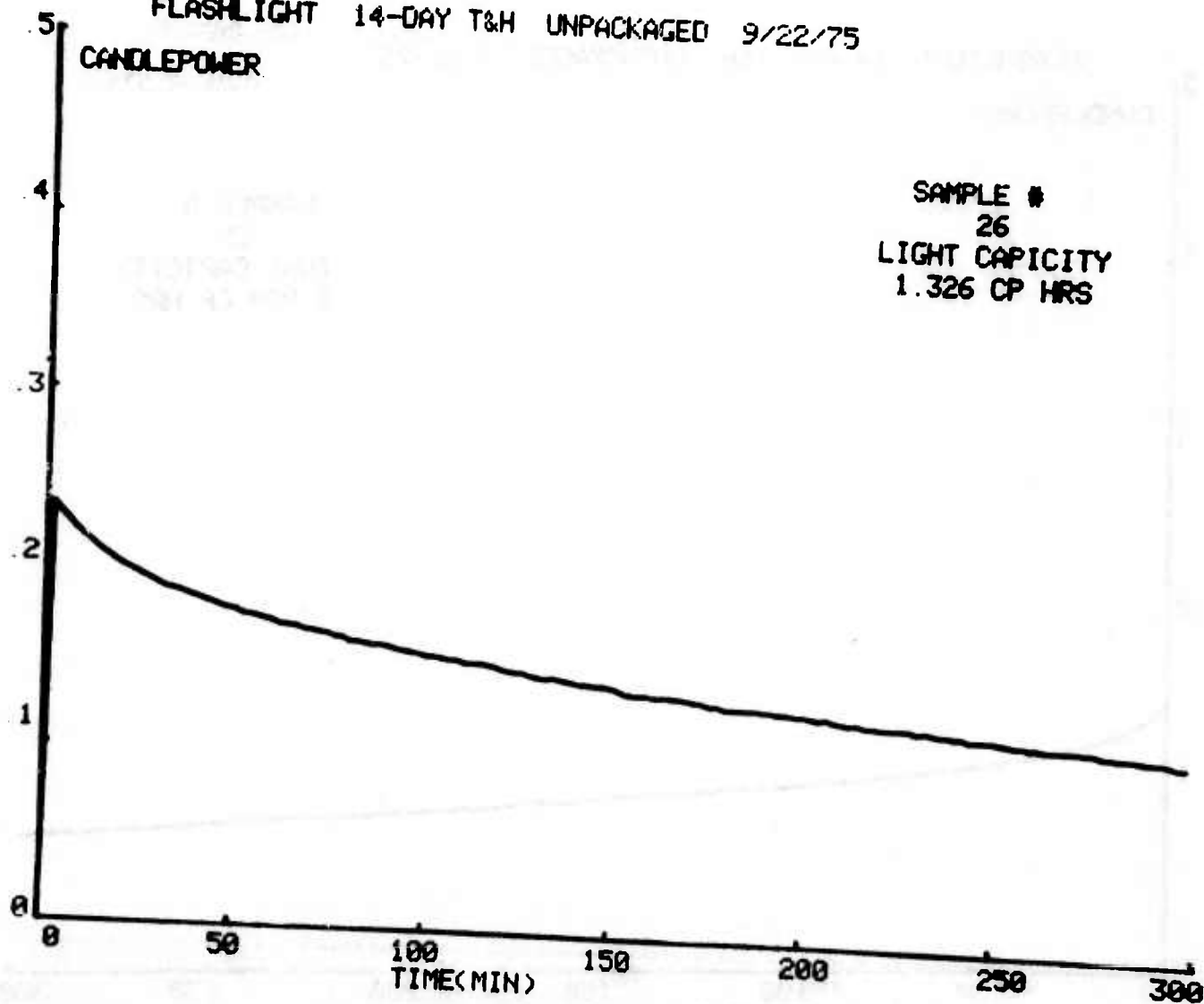
SAMPLE #  
24  
LIGHT CAPACITY  
1.080 CP HRS





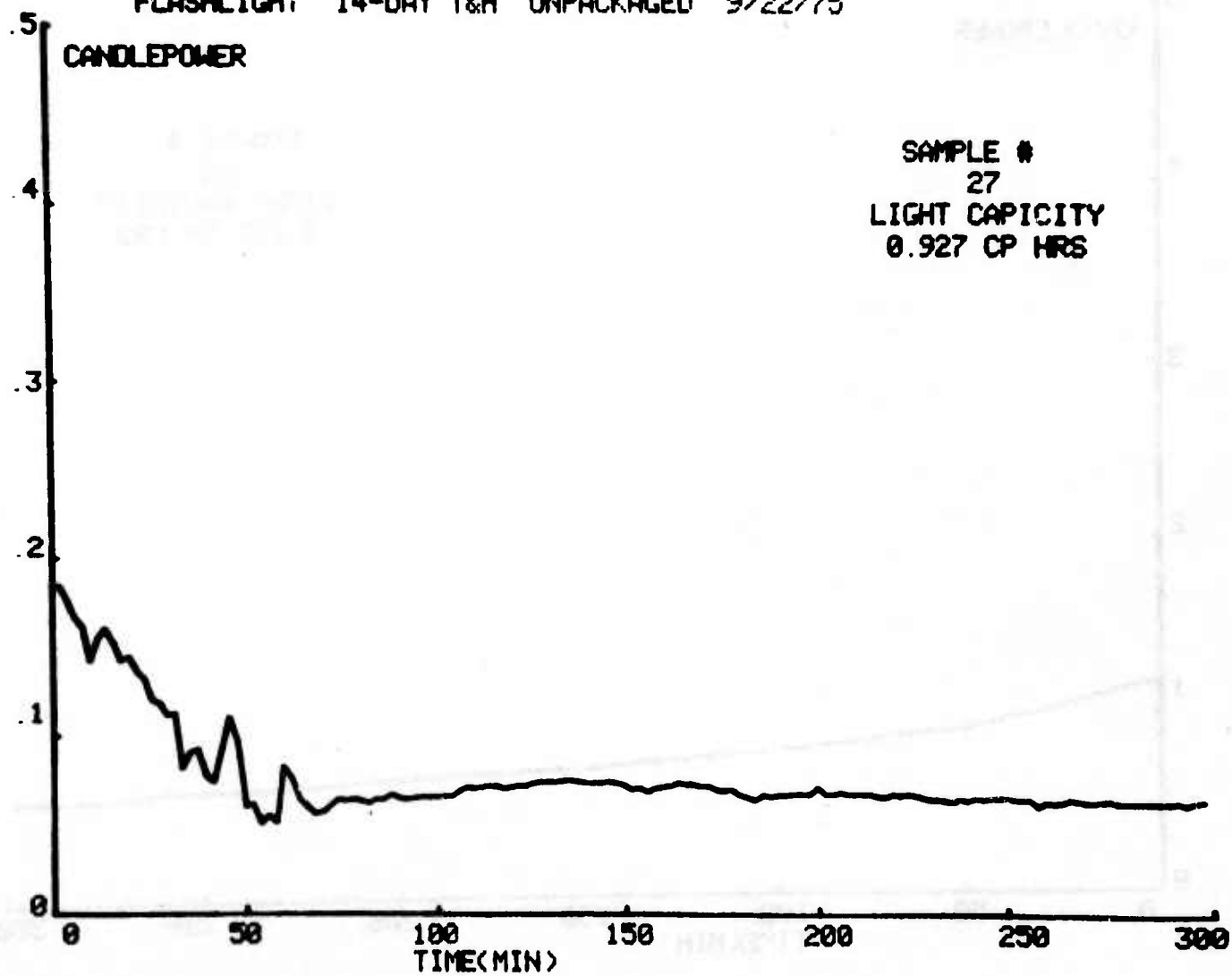
FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75  
CANDLEPOWER

SAMPLE #  
26  
LIGHT CAPACITY  
1.326 CP HRS





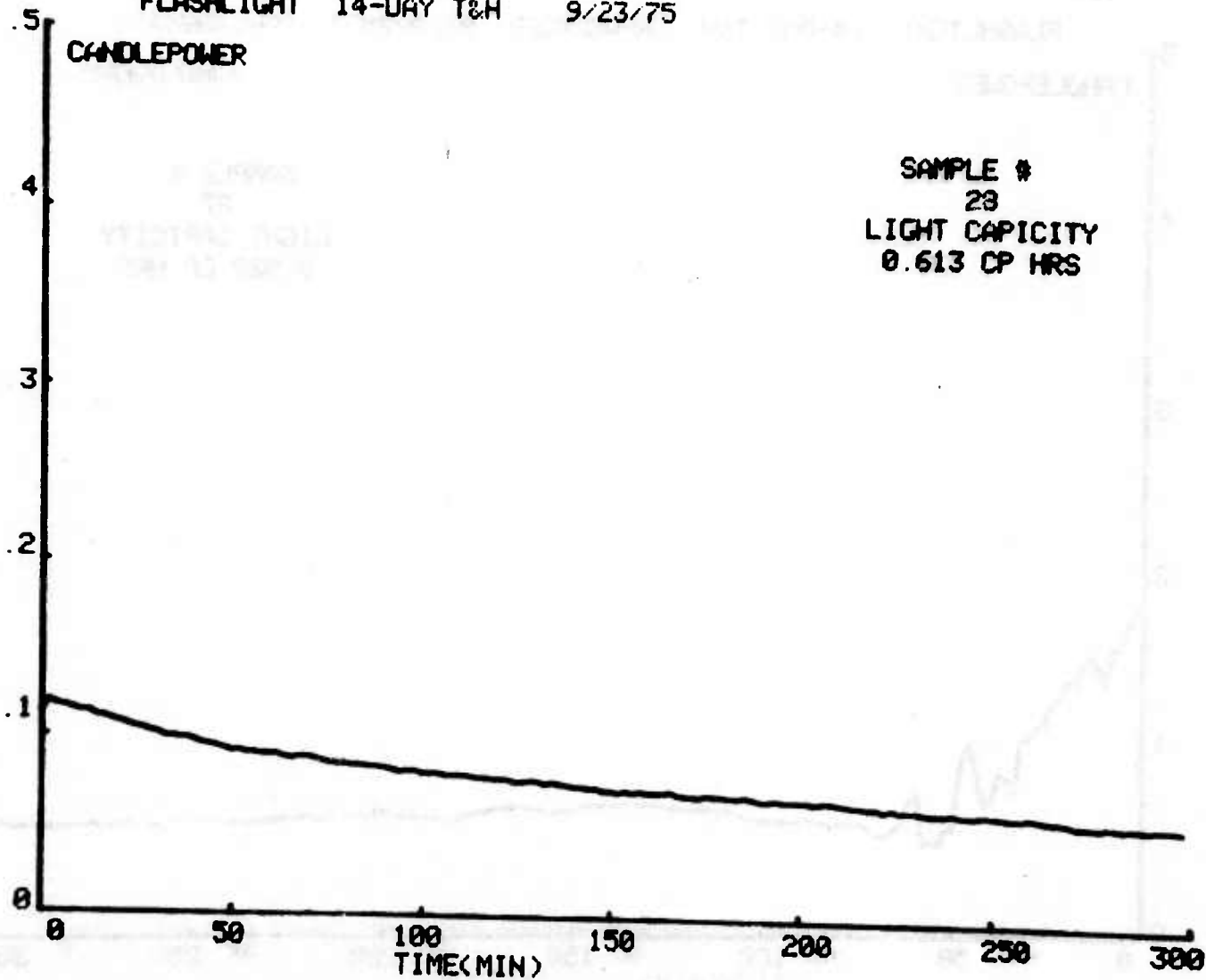
FLASHLIGHT 14-DAY T&H UNPACKAGED 9/22/75



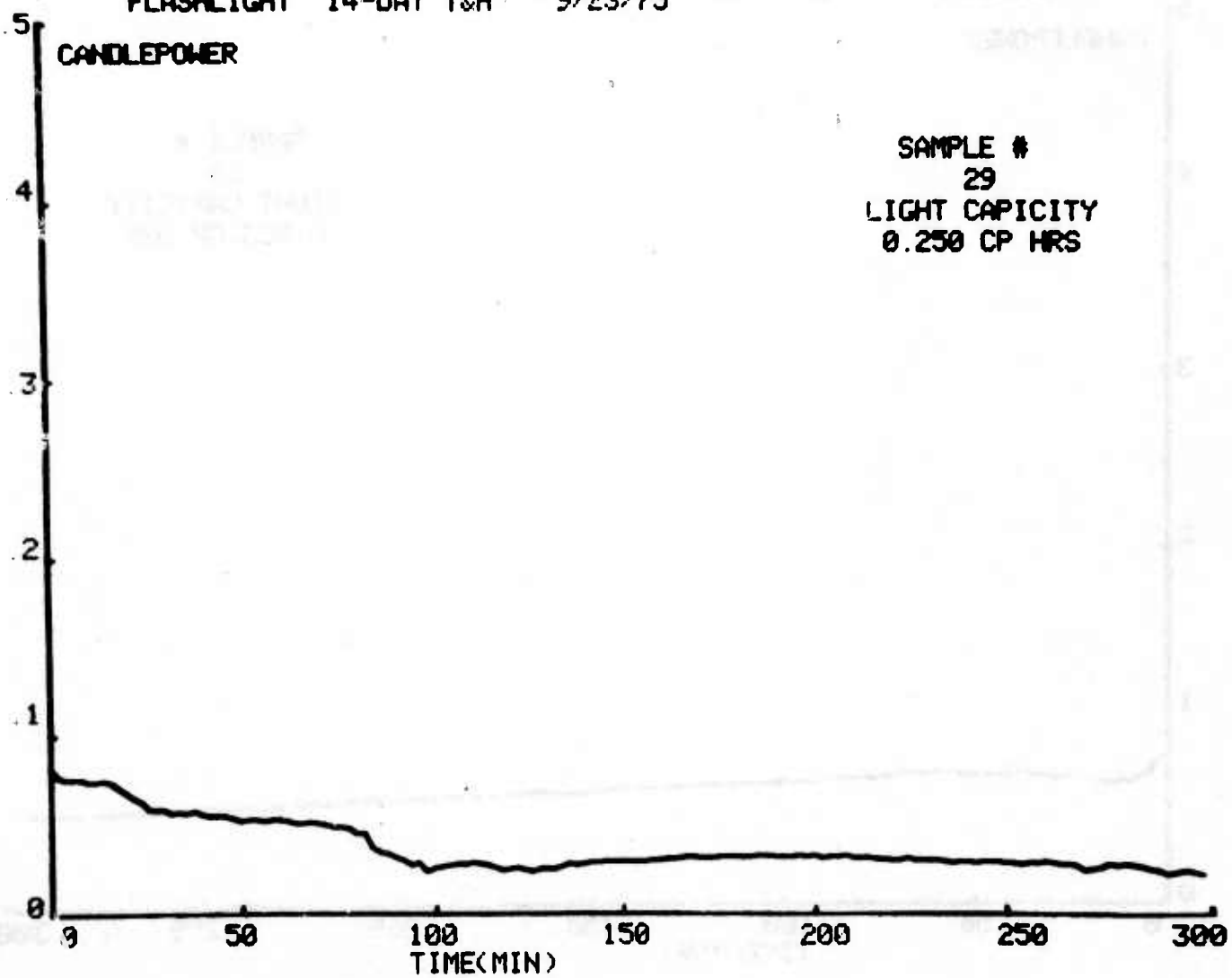
FLASHLIGHT 14-DAY T&H 9/23/75

CANDLEPOWER

SAMPLE #  
23  
LIGHT CAPACITY  
0.613 CP HRS



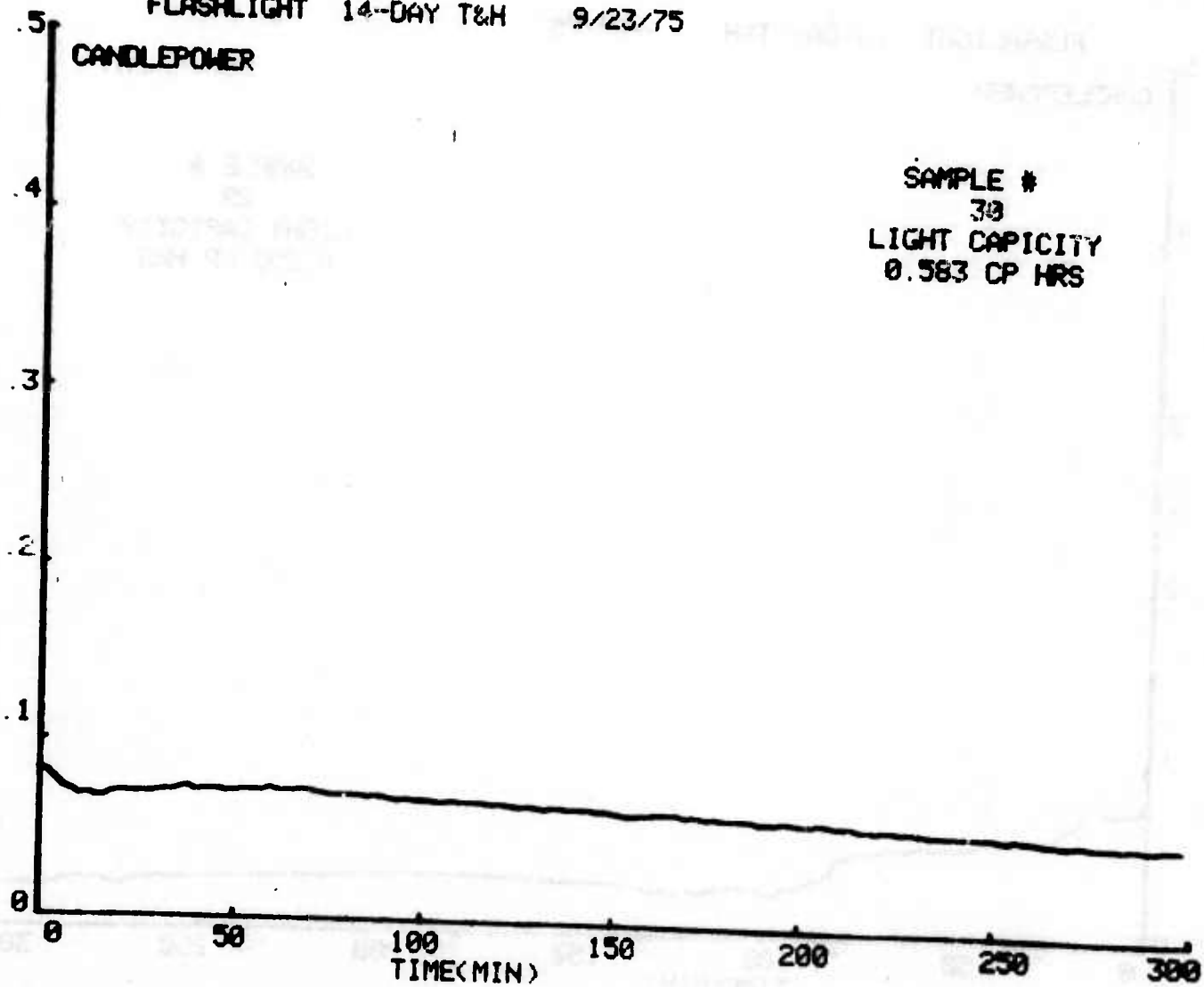
FLASHLIGHT 14-DAY T&H 9/23/75



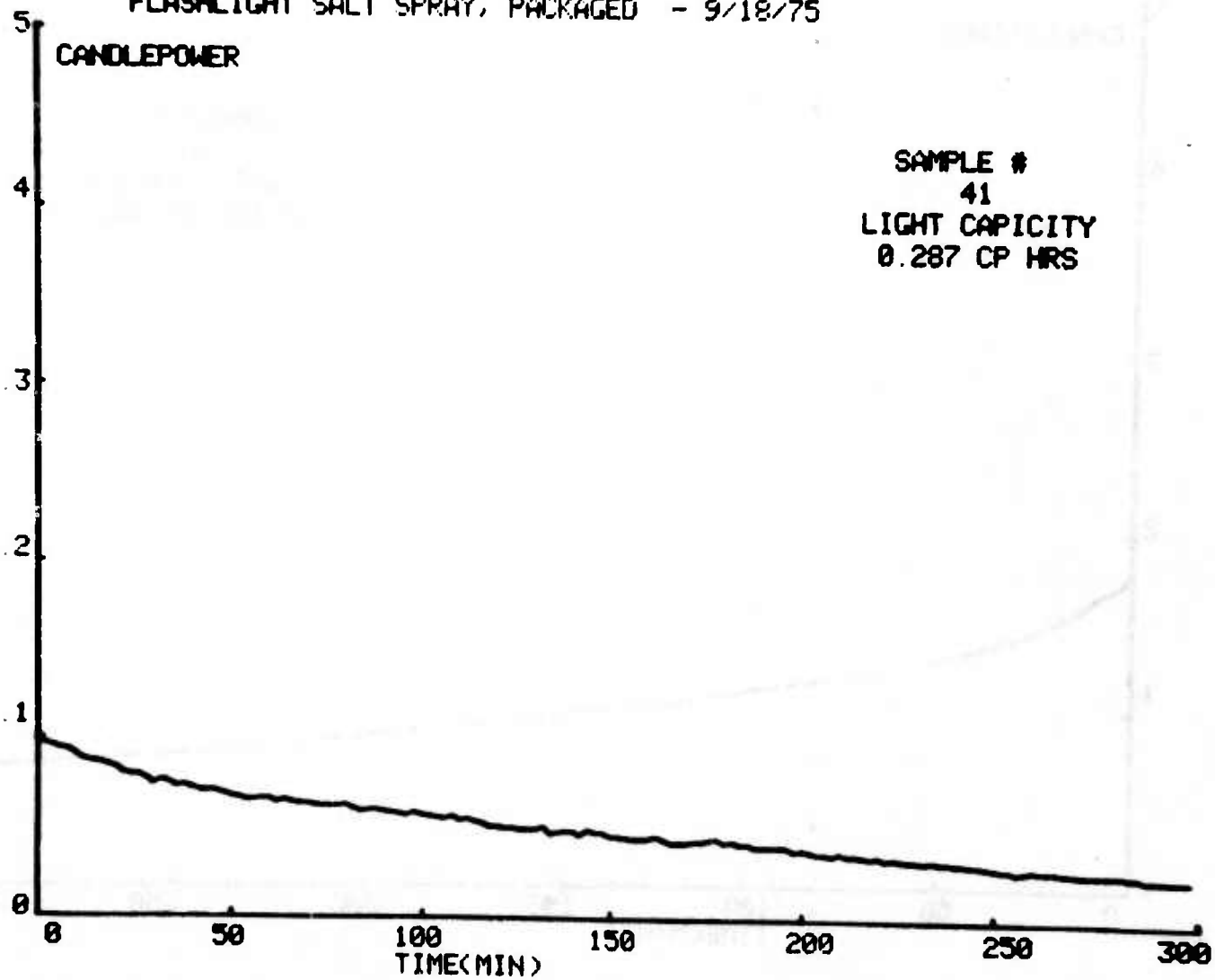
FLASHLIGHT 14-DAY T&H 9/23/75

CANDLEPOWER

SAMPLE #  
39  
LIGHT CAPACITY  
0.583 CP HRS



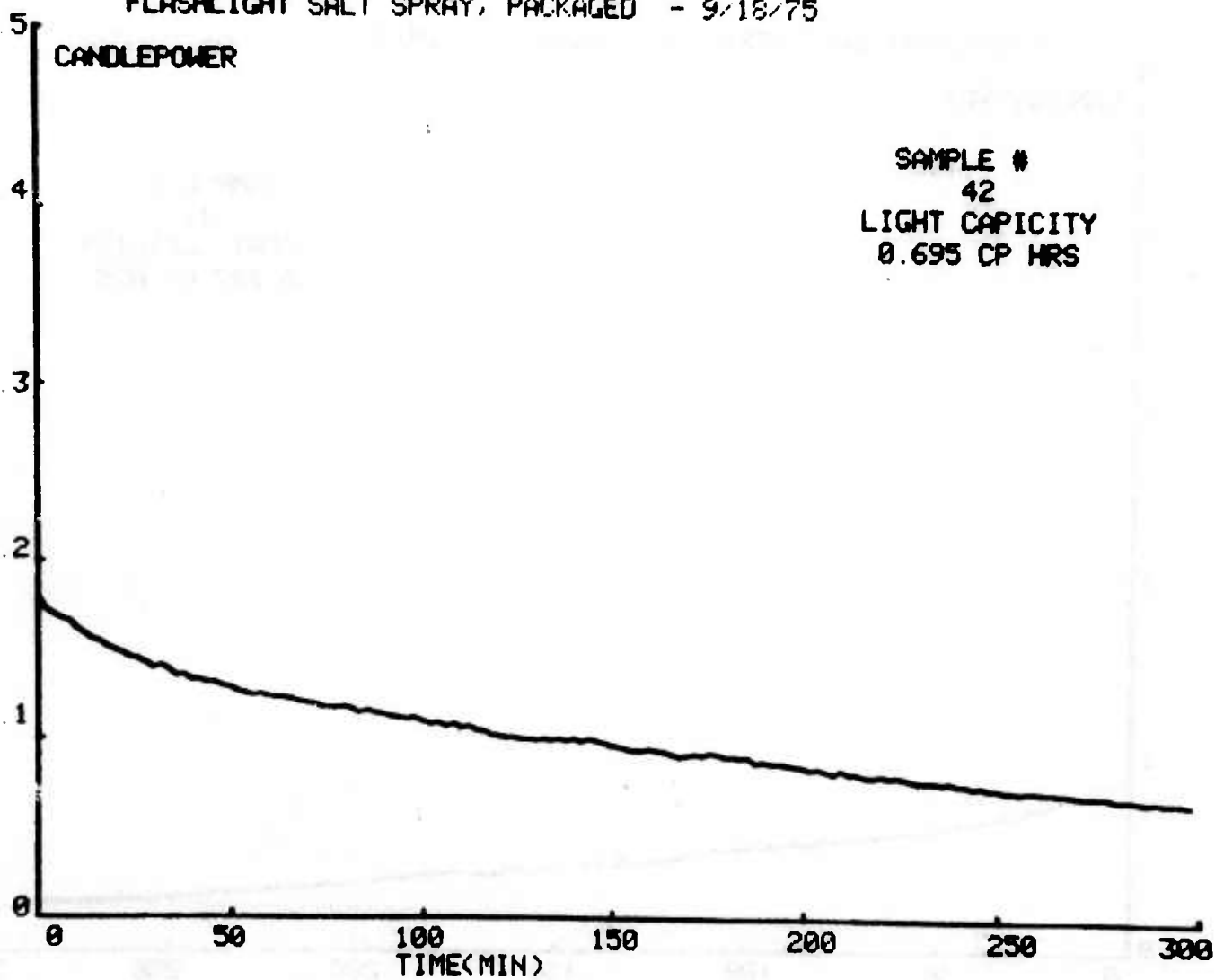
FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75



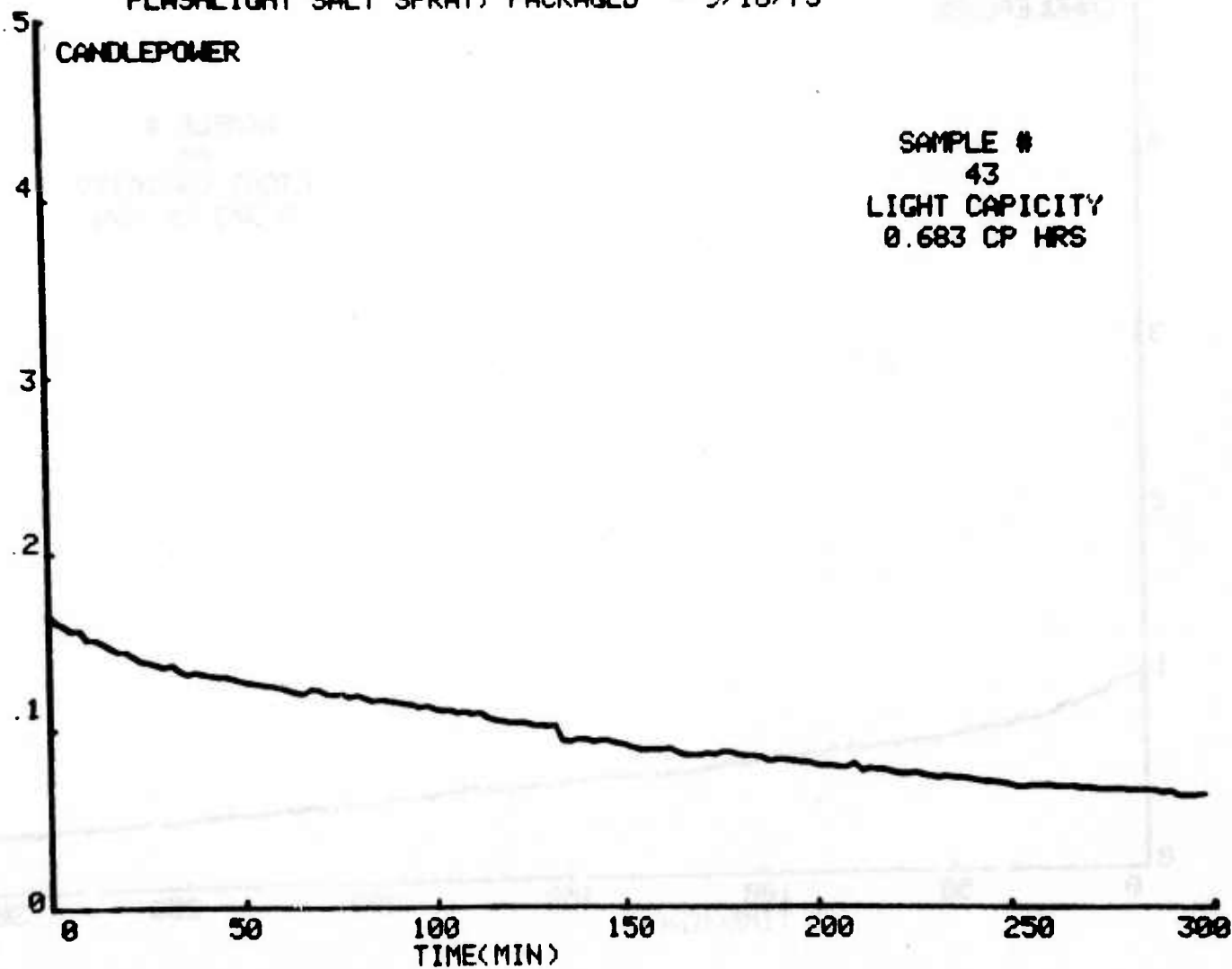
FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

CANDLEPOWER

SAMPLE #  
42  
LIGHT CAPICITY  
0.695 CP HRS



FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75



FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

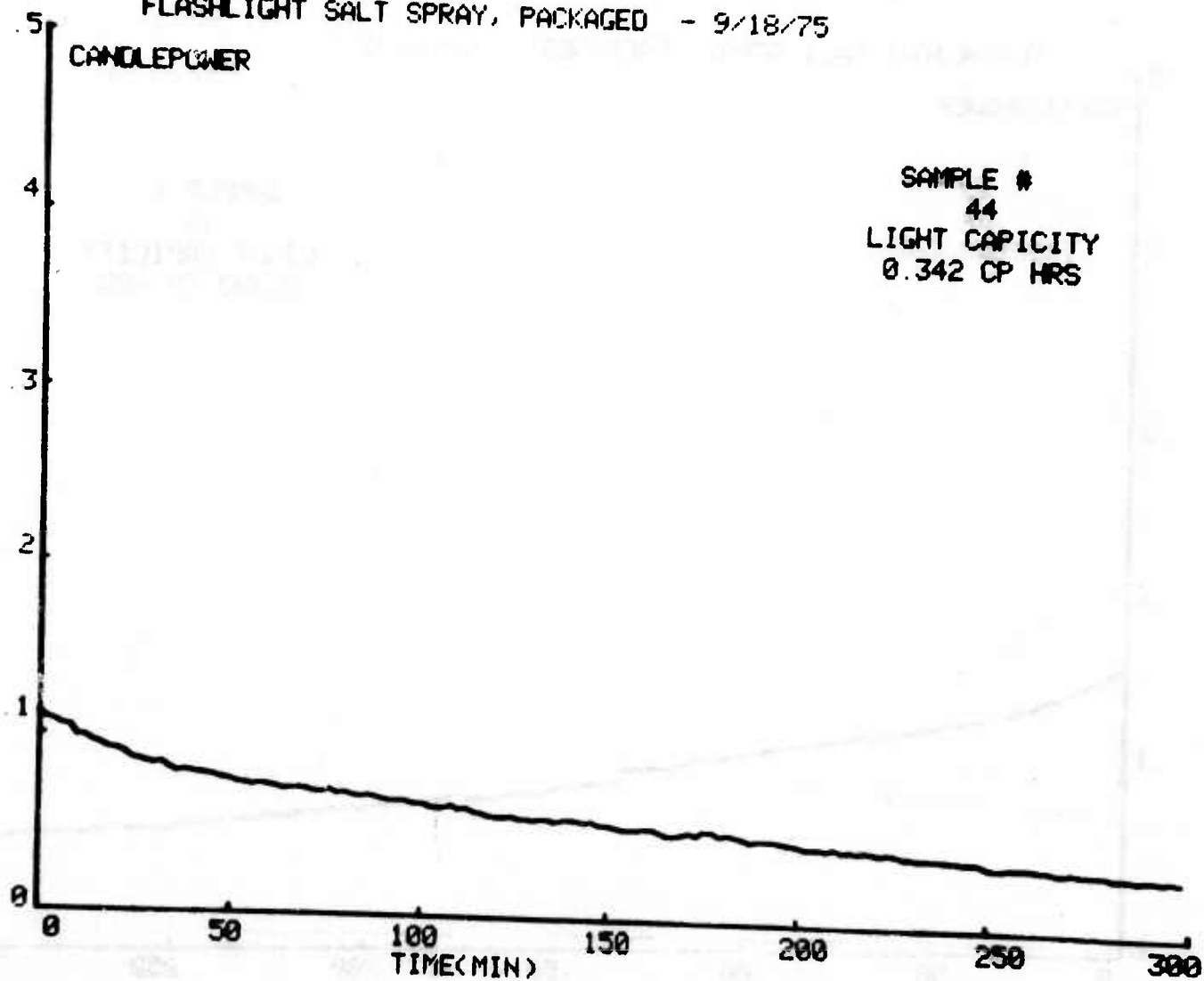
CANDLEPOWER

SAMPLE #

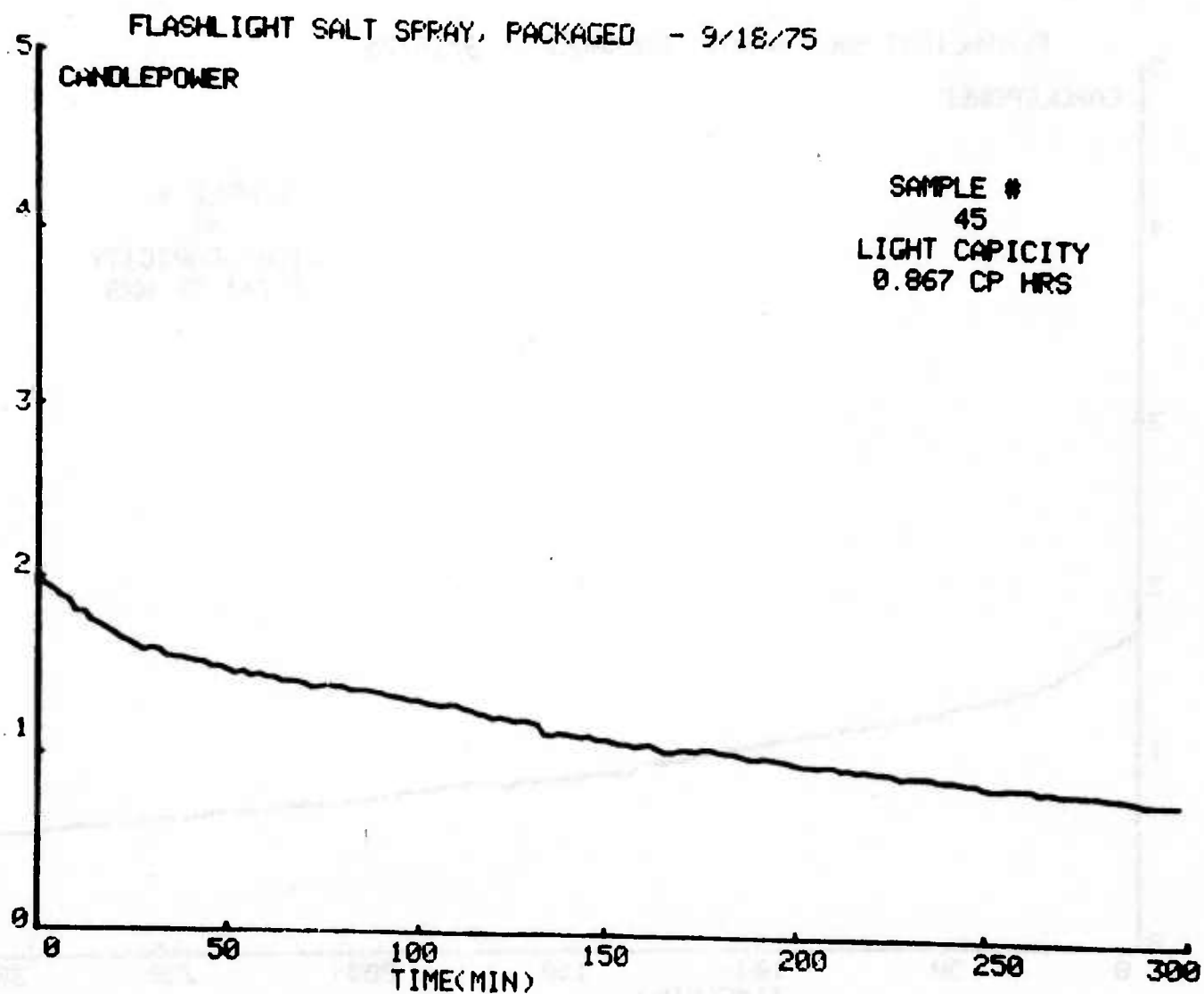
44

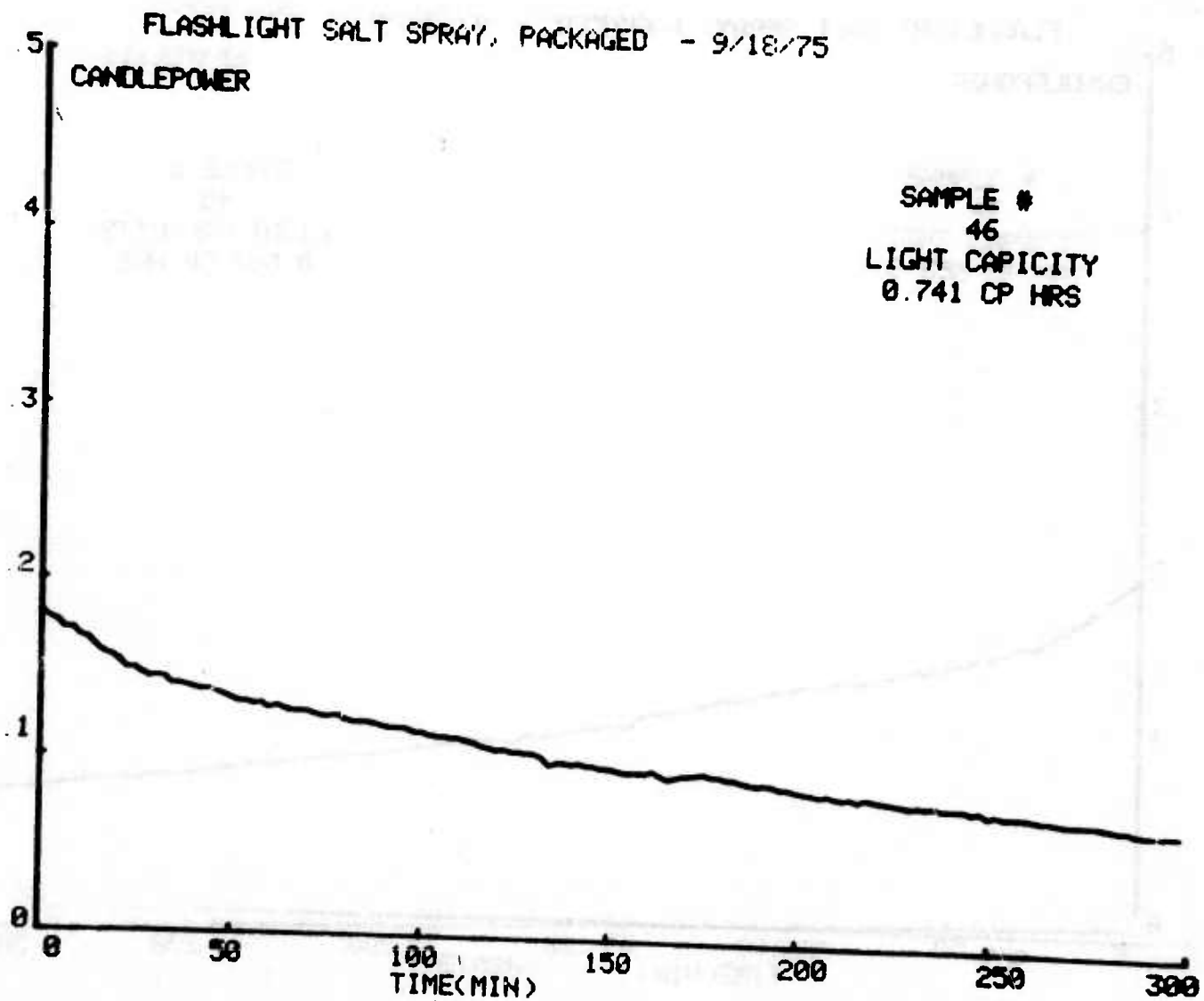
LIGHT CAPACITY

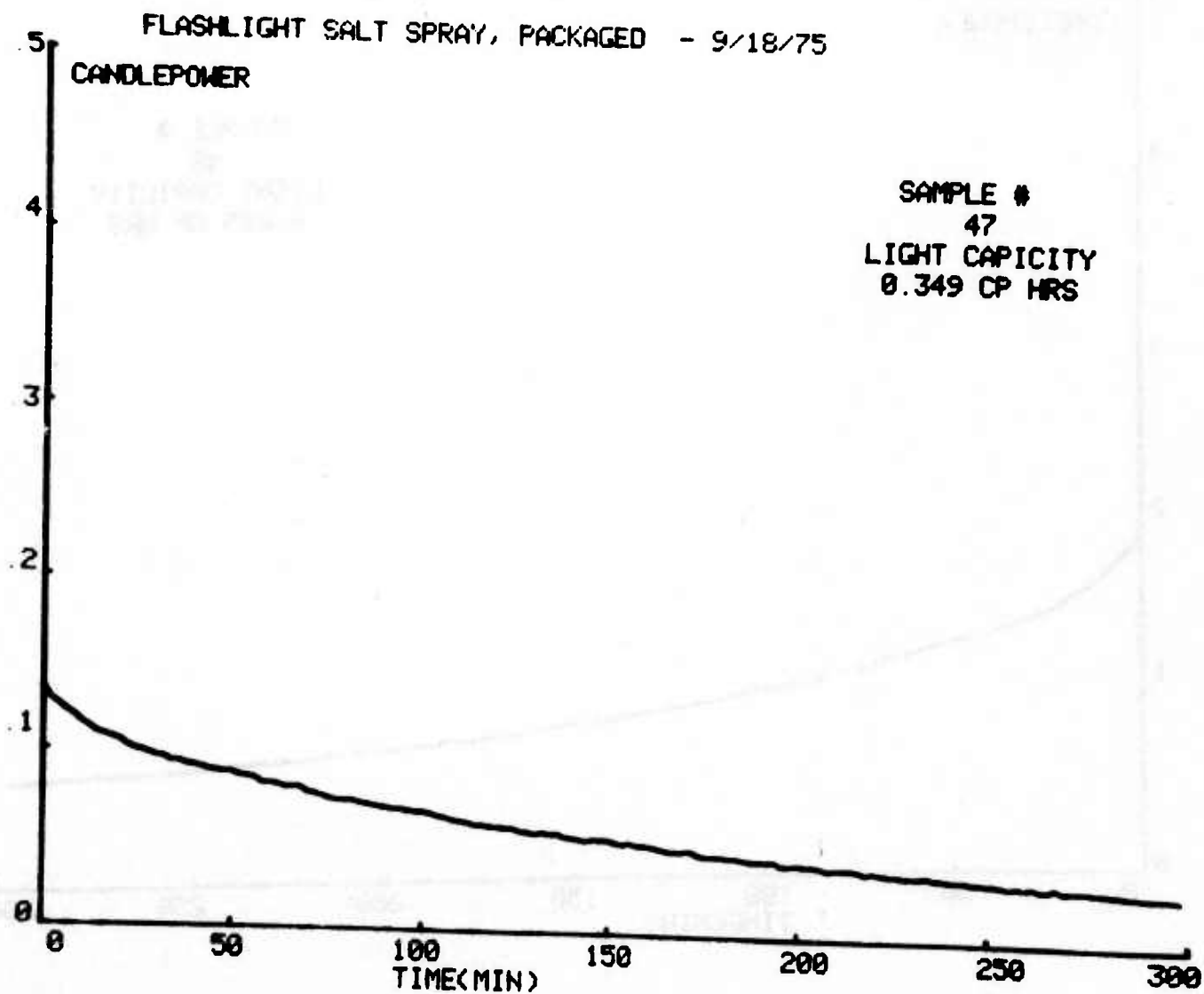
0.342 CP HRS







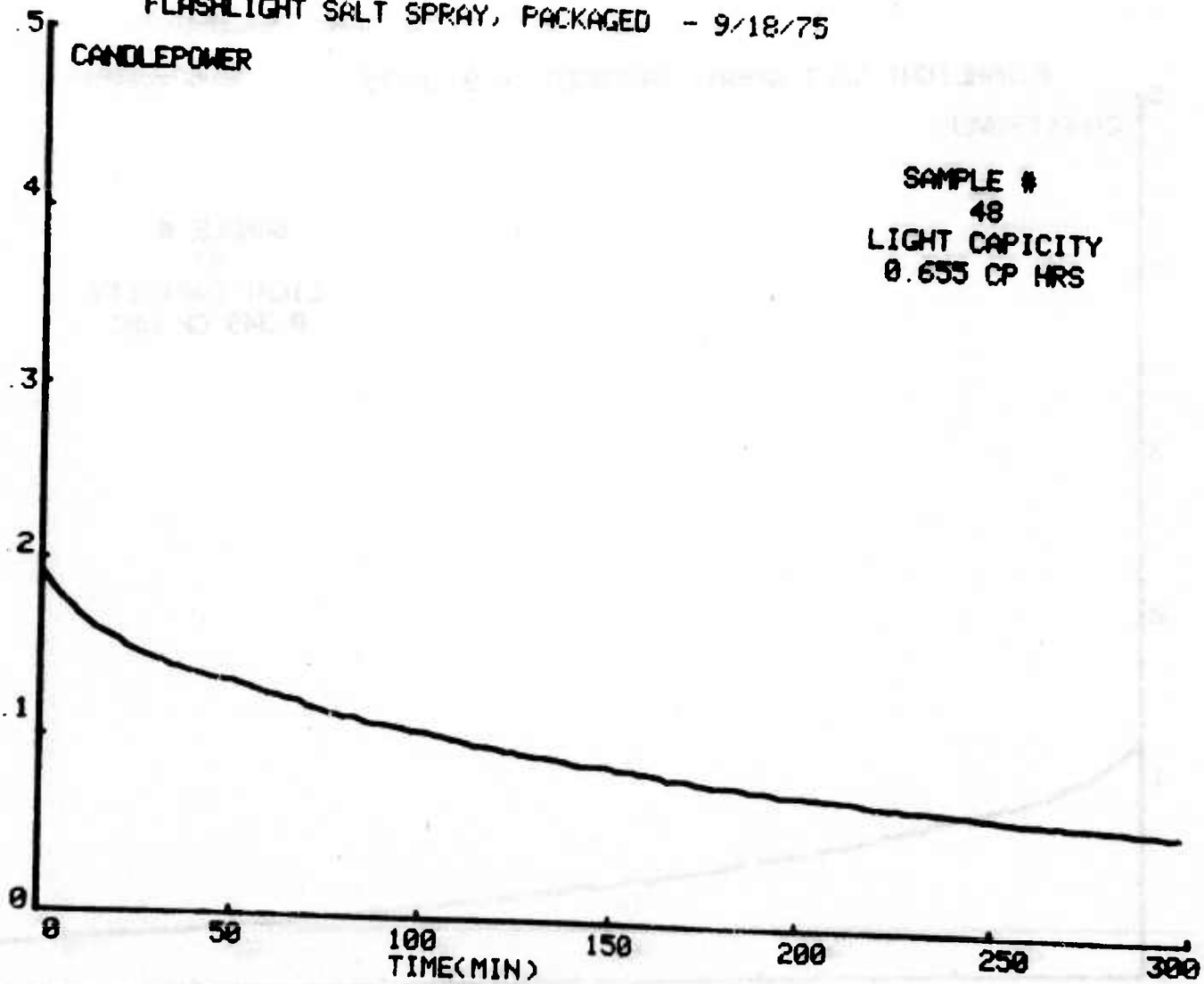




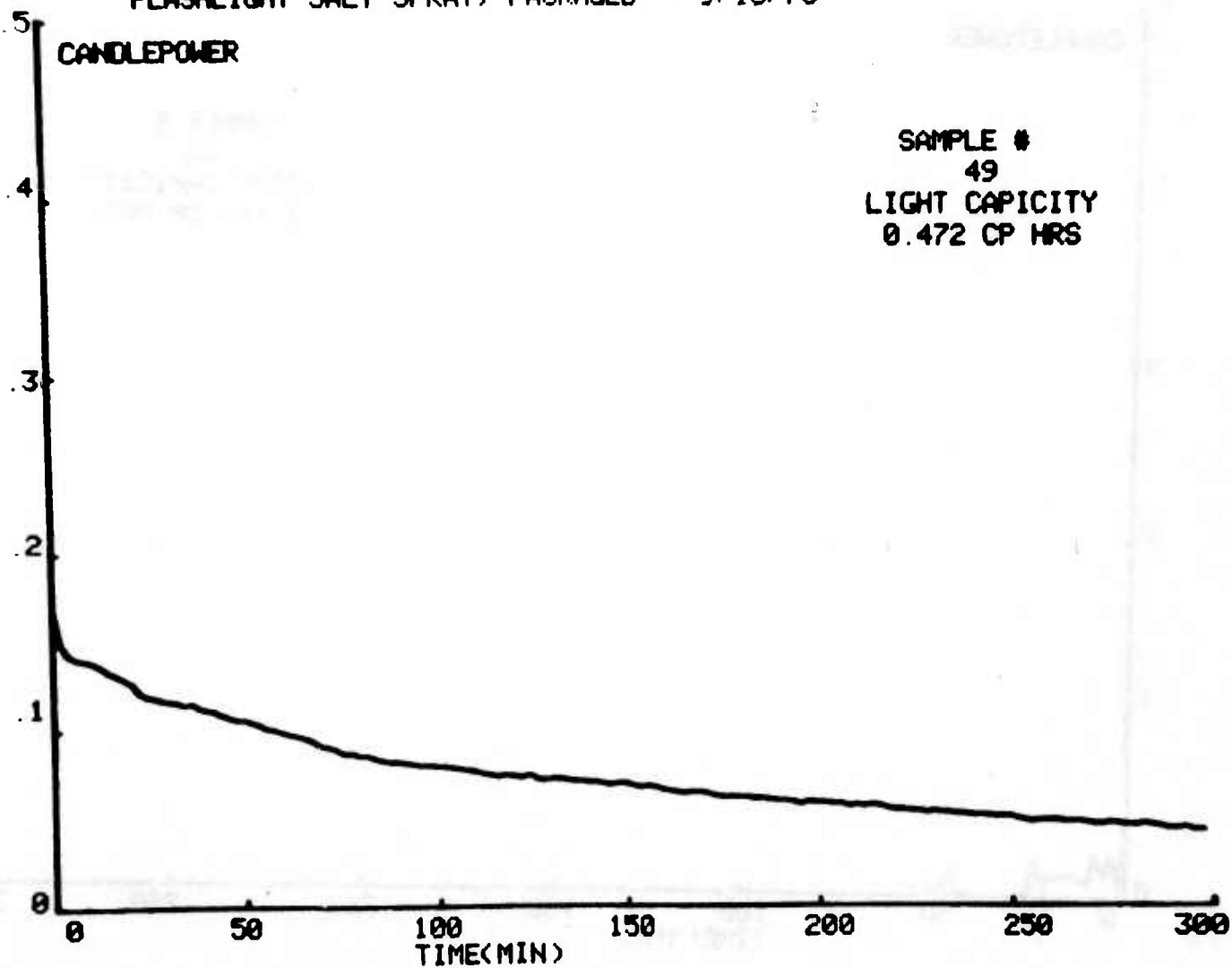
FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

CANDLEPOWER

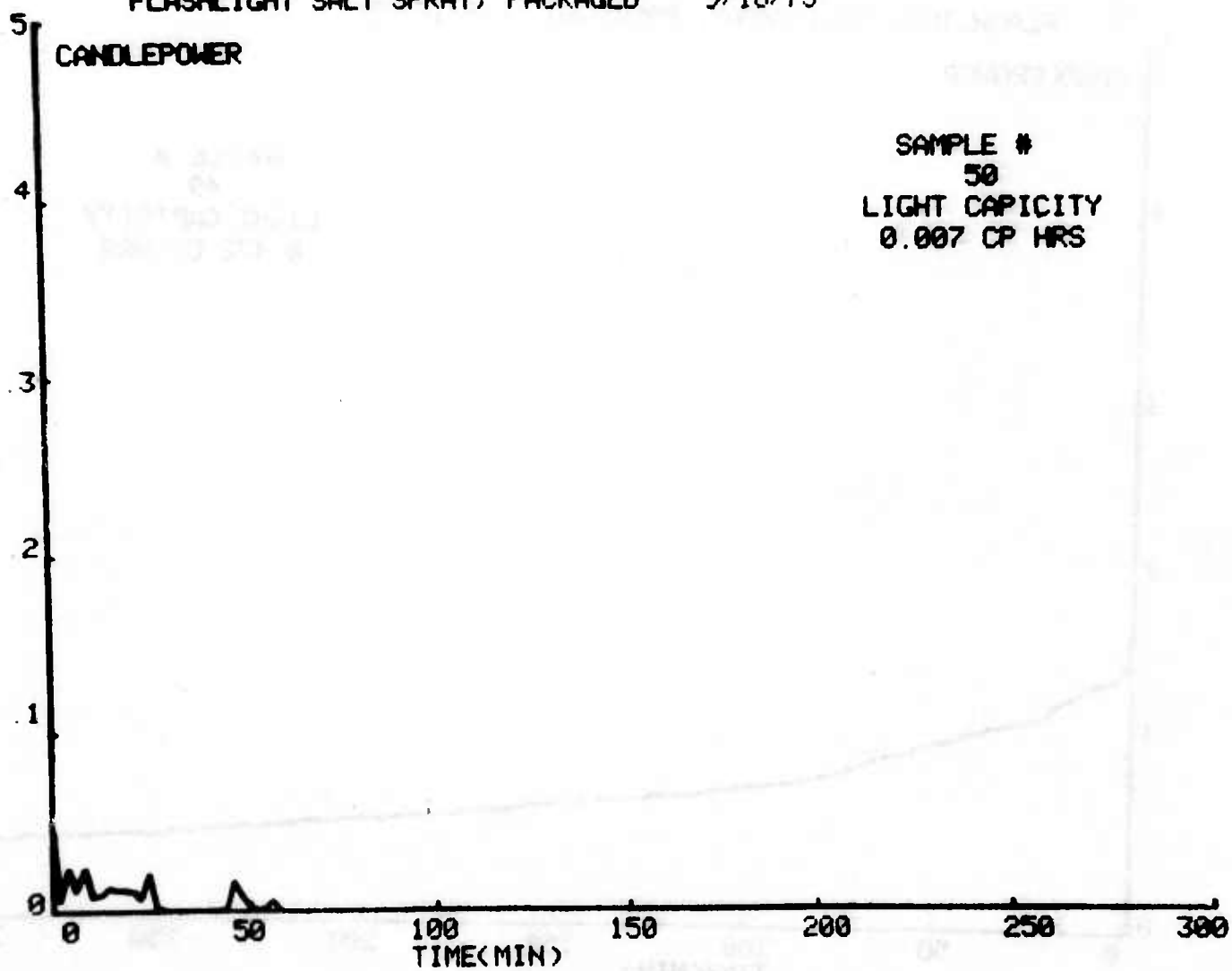
SAMPLE #  
48  
LIGHT CAPACITY  
0.655 CP HRS

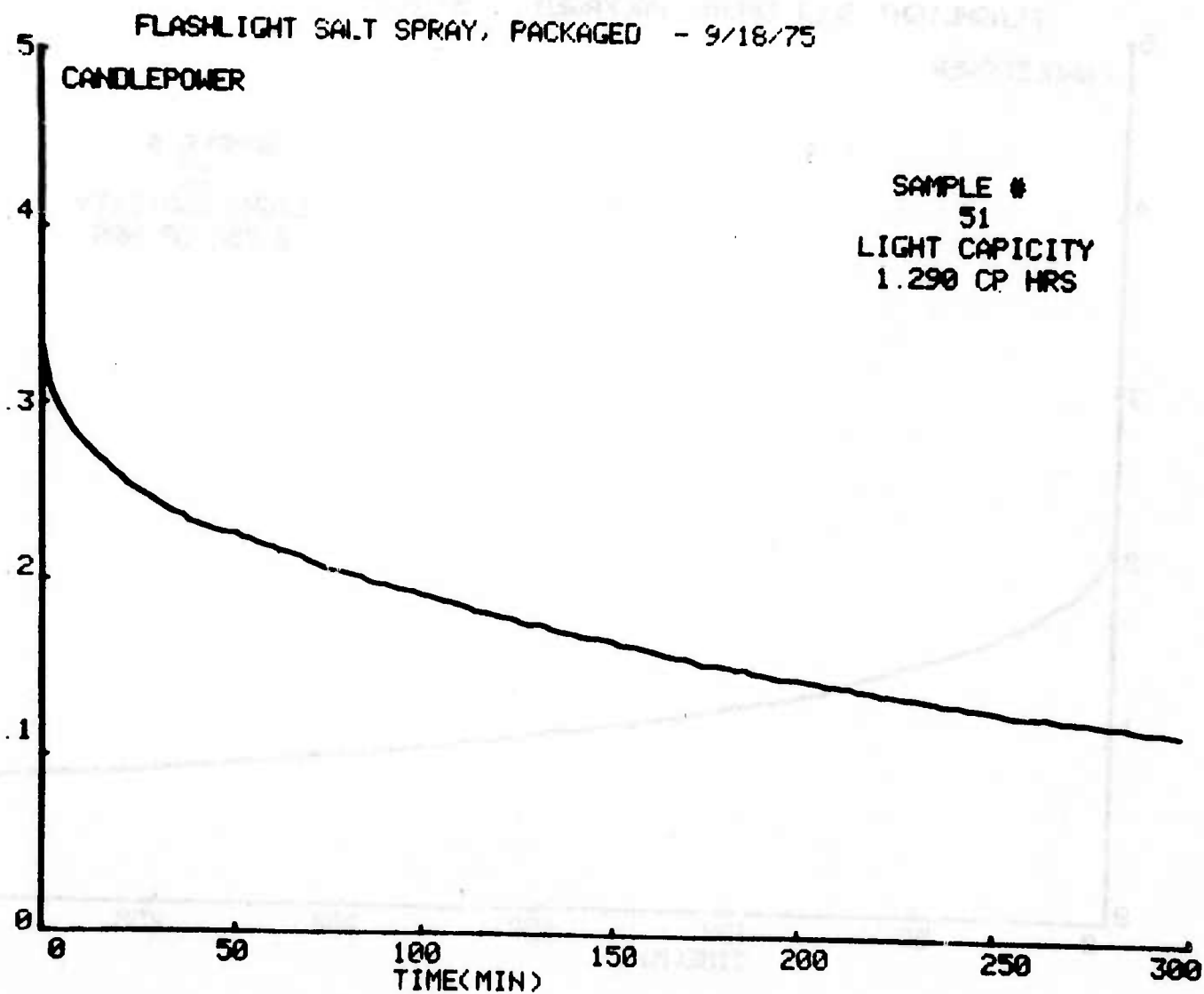


FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75



FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

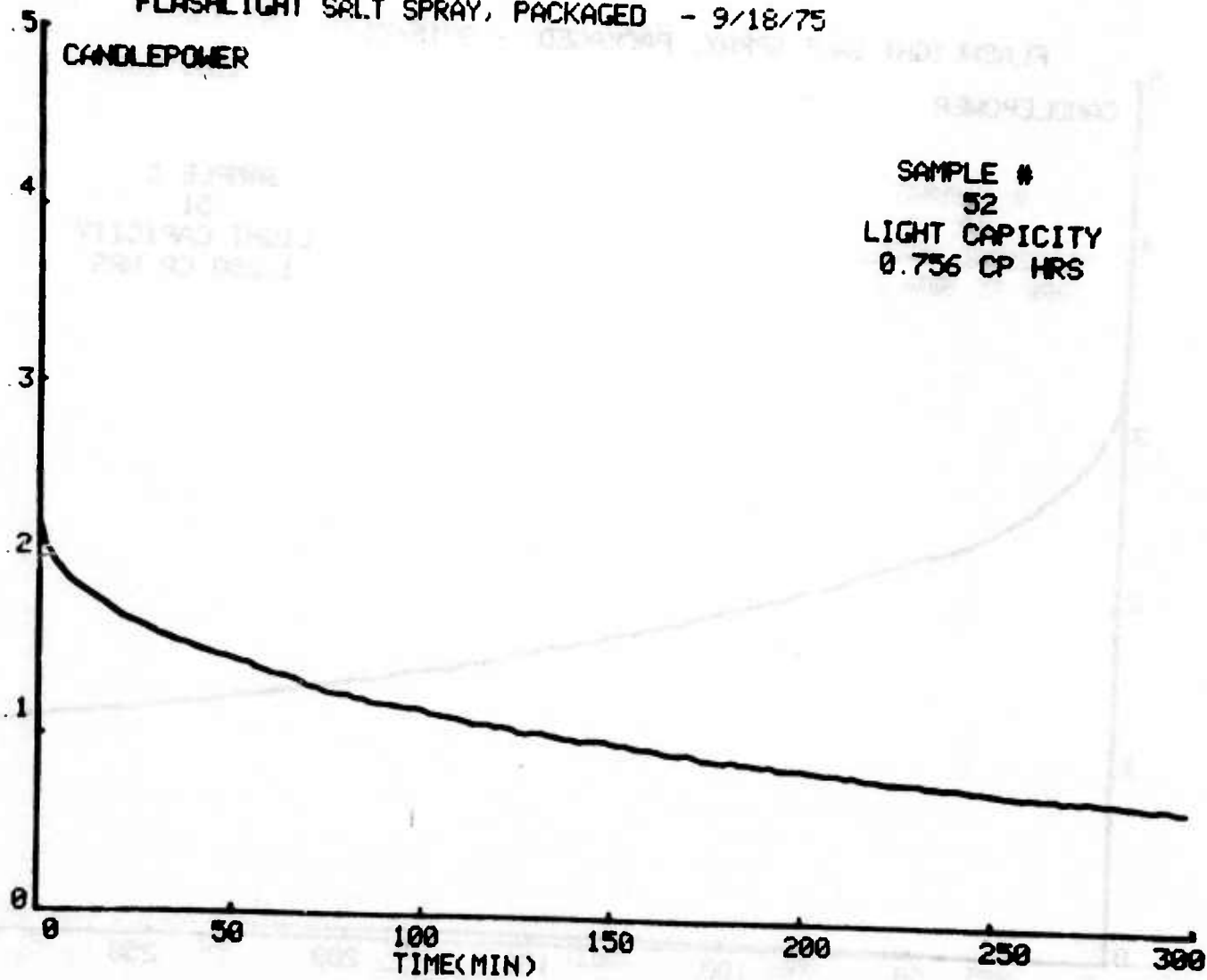




FLASHLIGHT SALT SPRAY, PACKAGED - 9/18/75

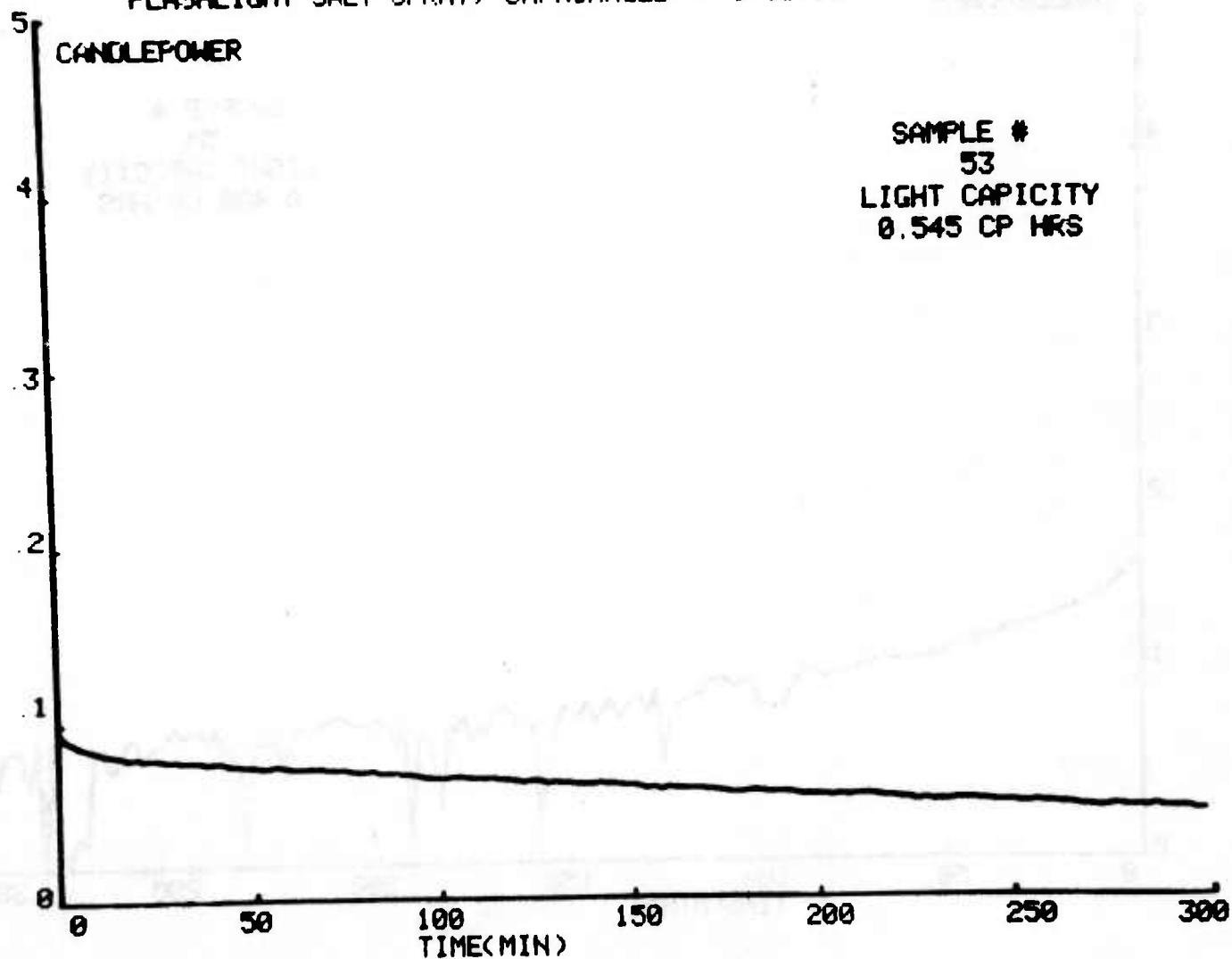
CANDLEPOWER

SAMPLE #  
52  
LIGHT CAPACITY  
0.756 CP HRS





FLASHLIGHT SALT SPRAY, UNPACKAGED - 9/19/75



FLASHLIGHT SALT SPRAY, UNPACKAGED - 9/19/75

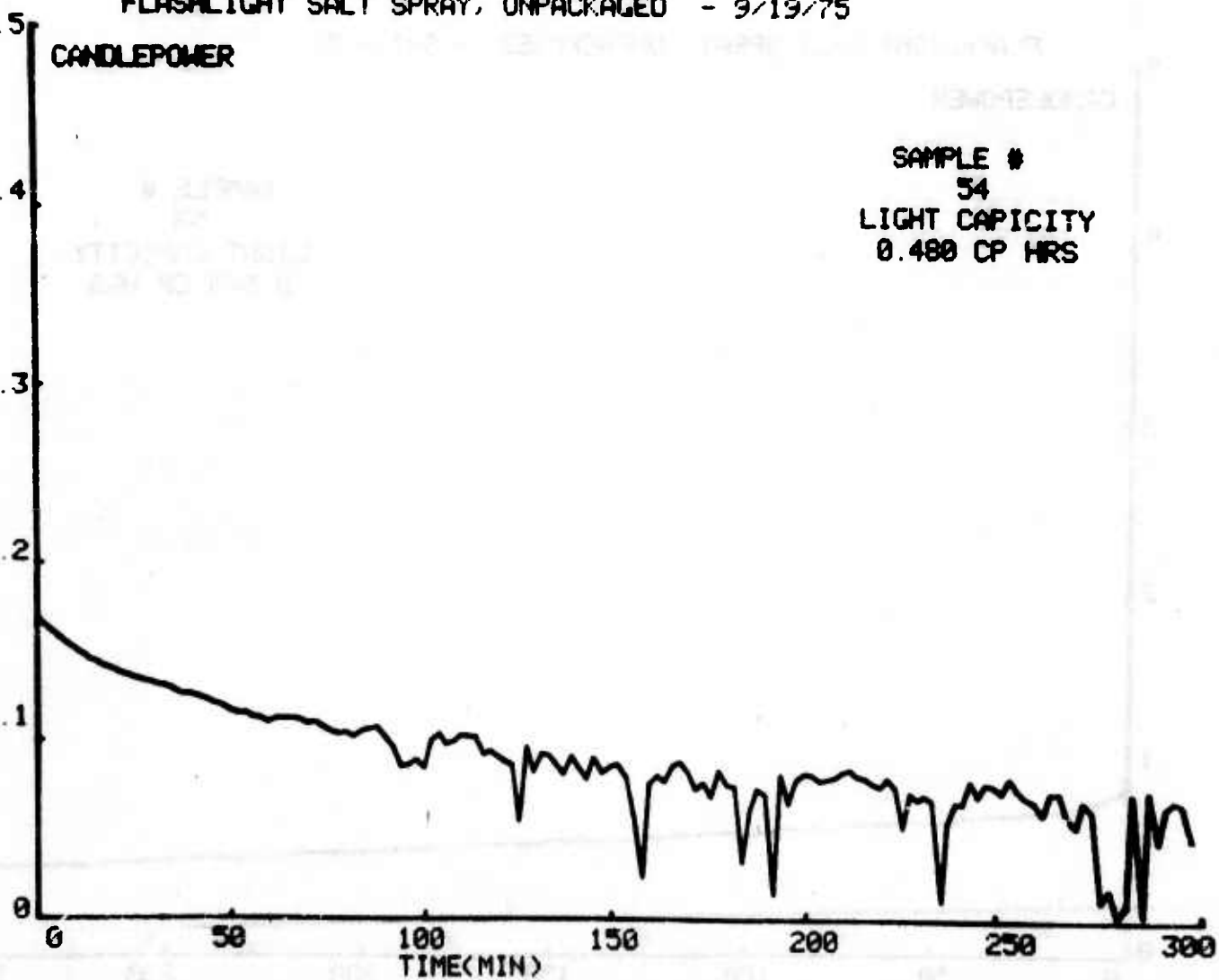
CANDLEPOWER

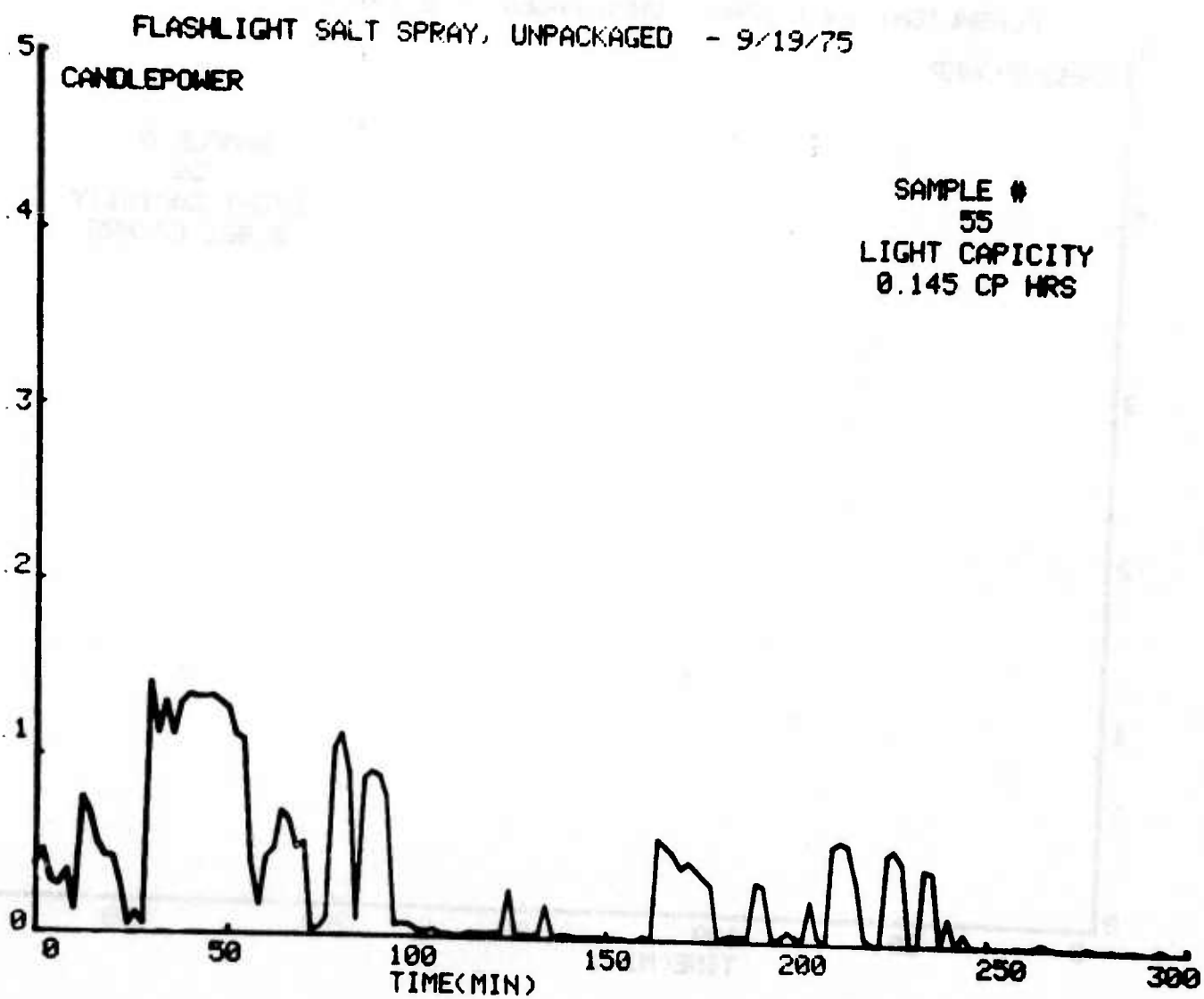
SAMPLE #

54

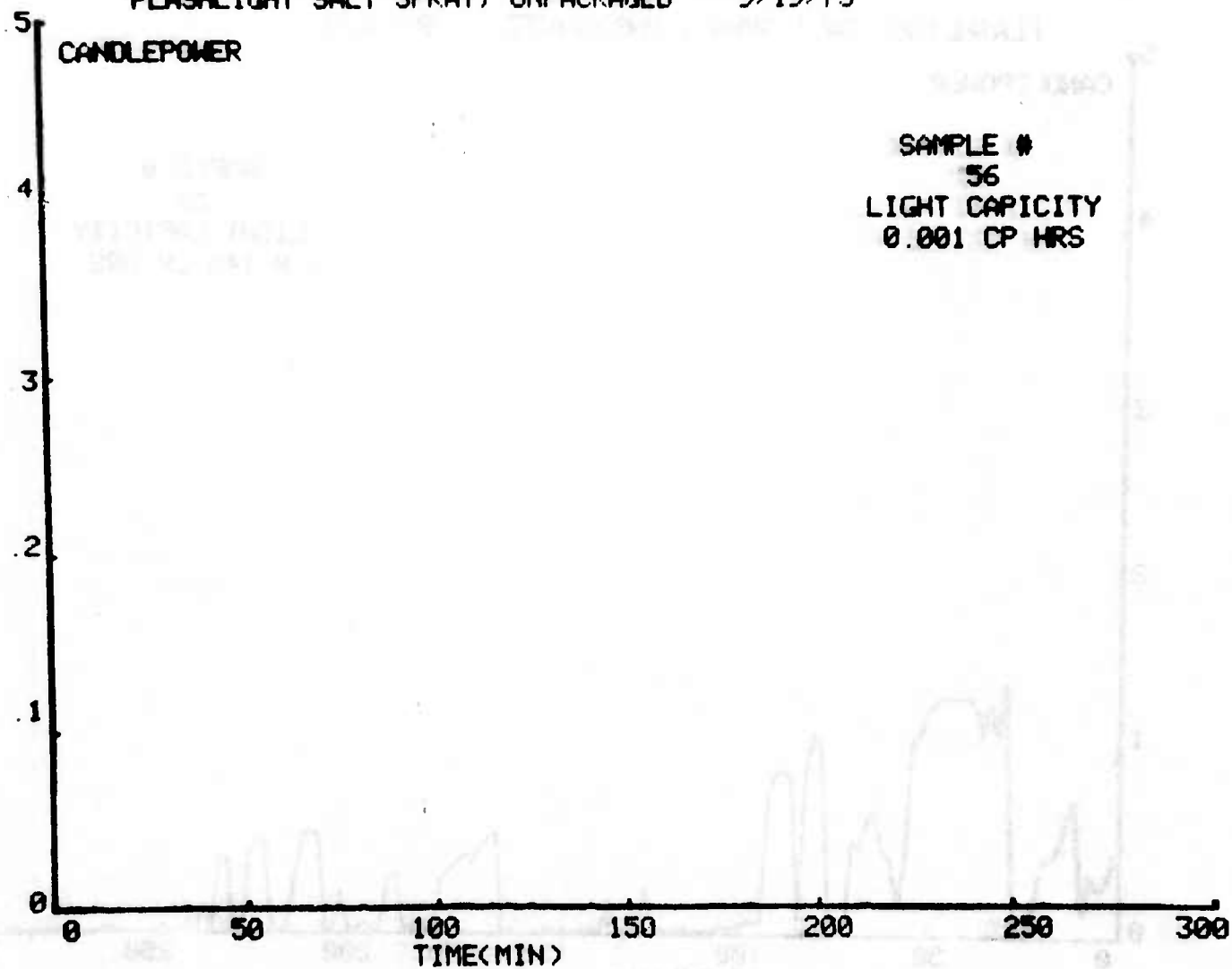
LIGHT CAPACITY

0.480 CP HRS

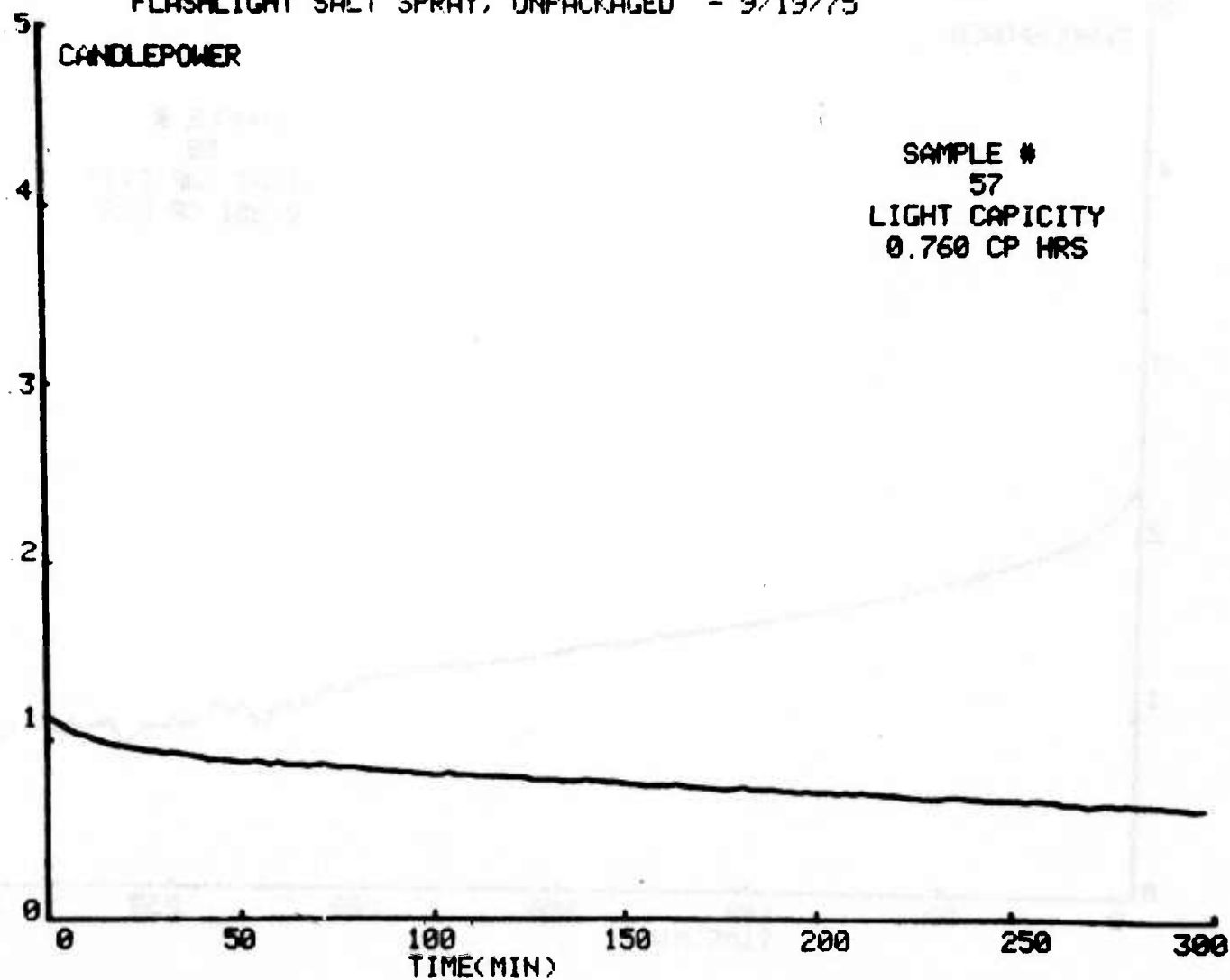




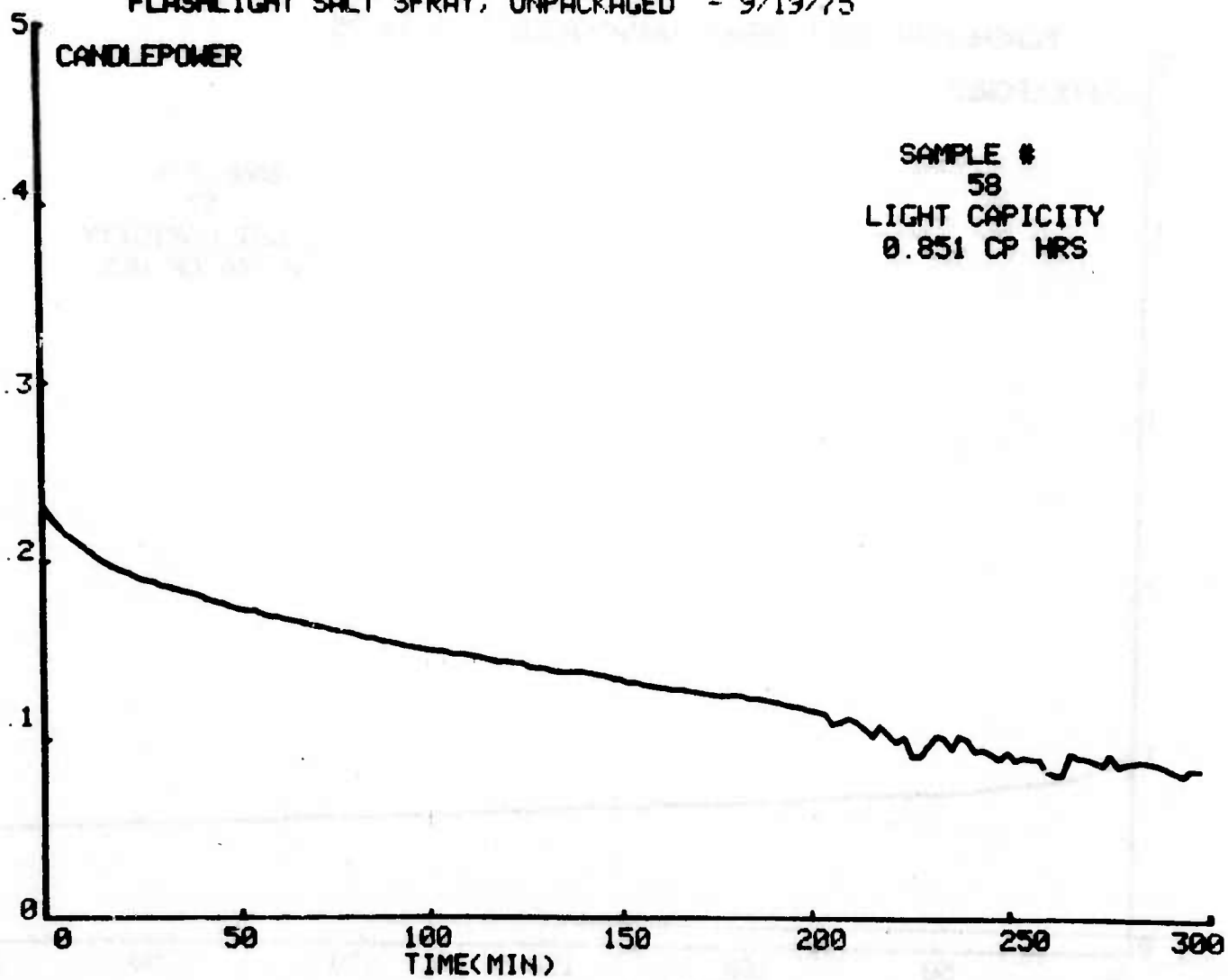
FLASHLIGHT SALT SPRAY, UNPACKAGED - 9/19/75

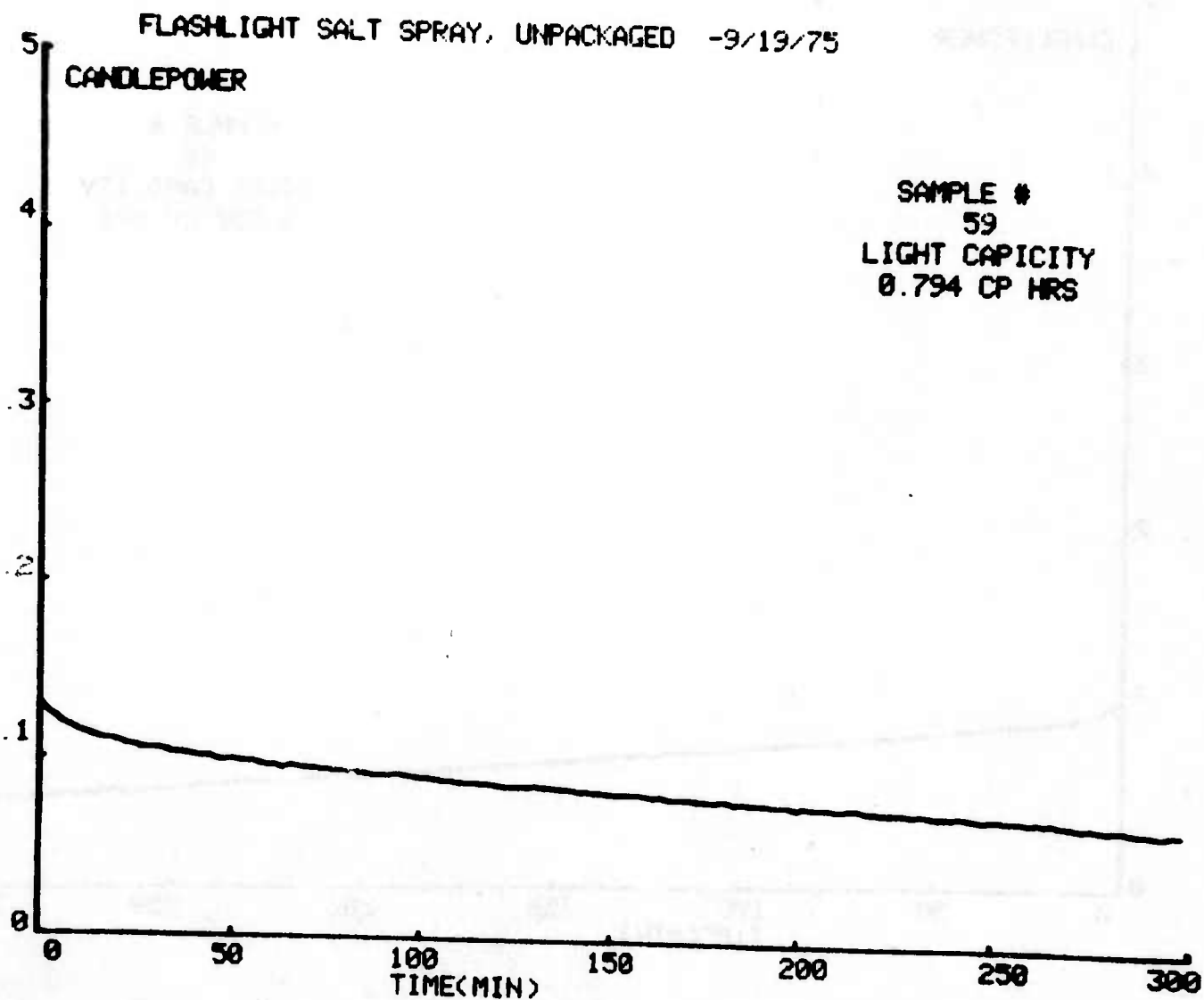


FLASHLIGHT SALT SPRAY, UNPACKAGED - 9/19/75

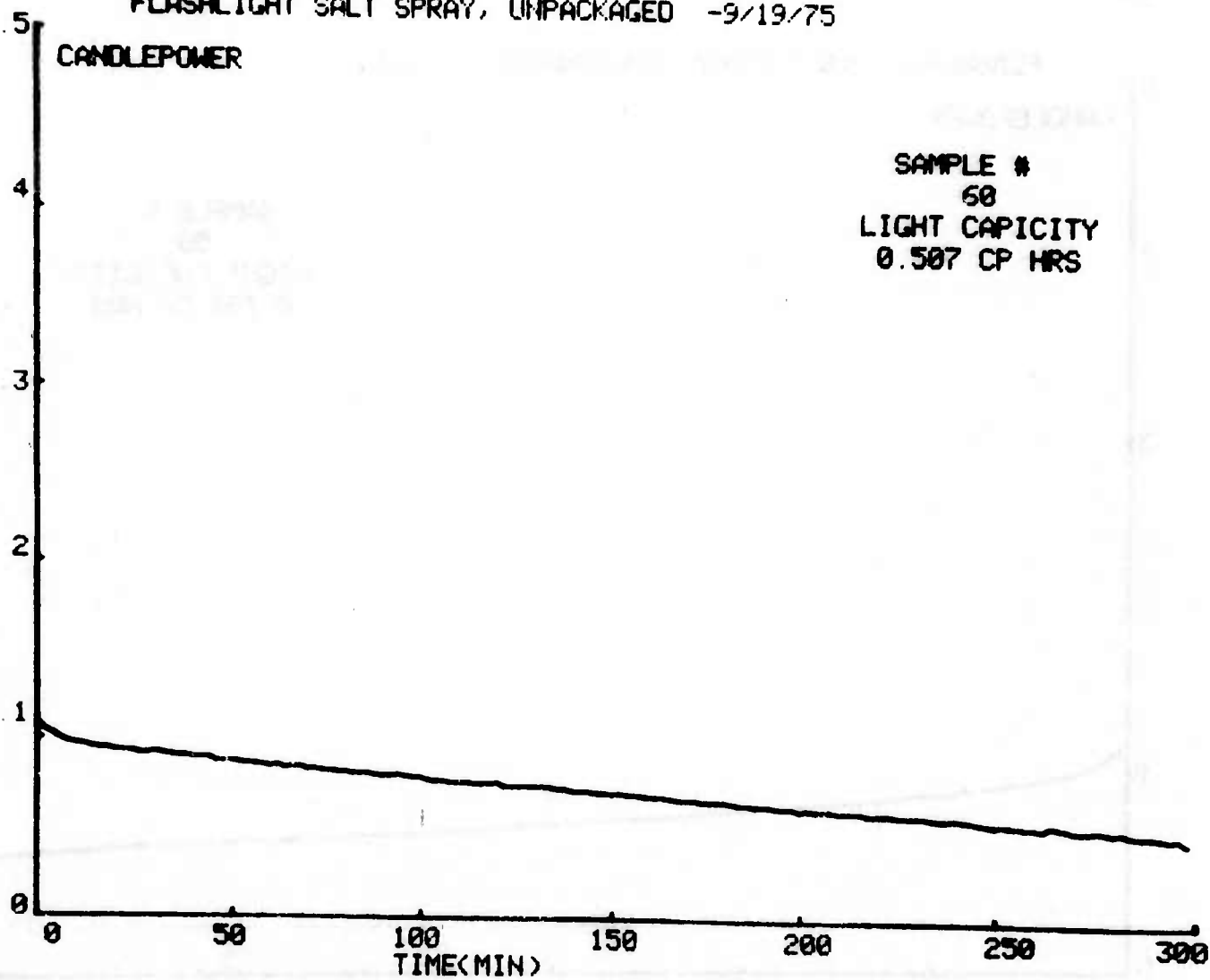


FLASHLIGHT SALT SPRAY, UNPACKAGED - 9/19/75

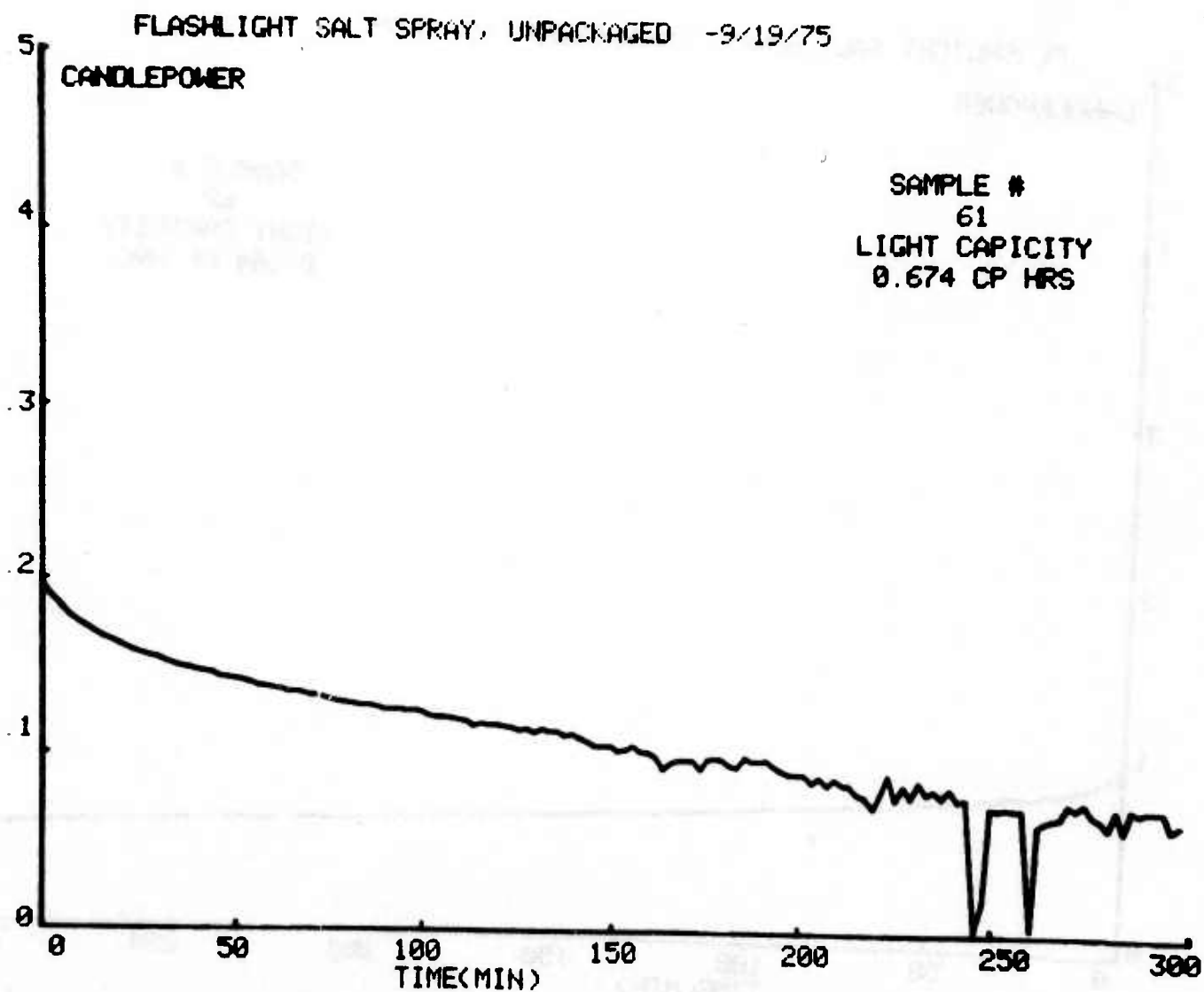




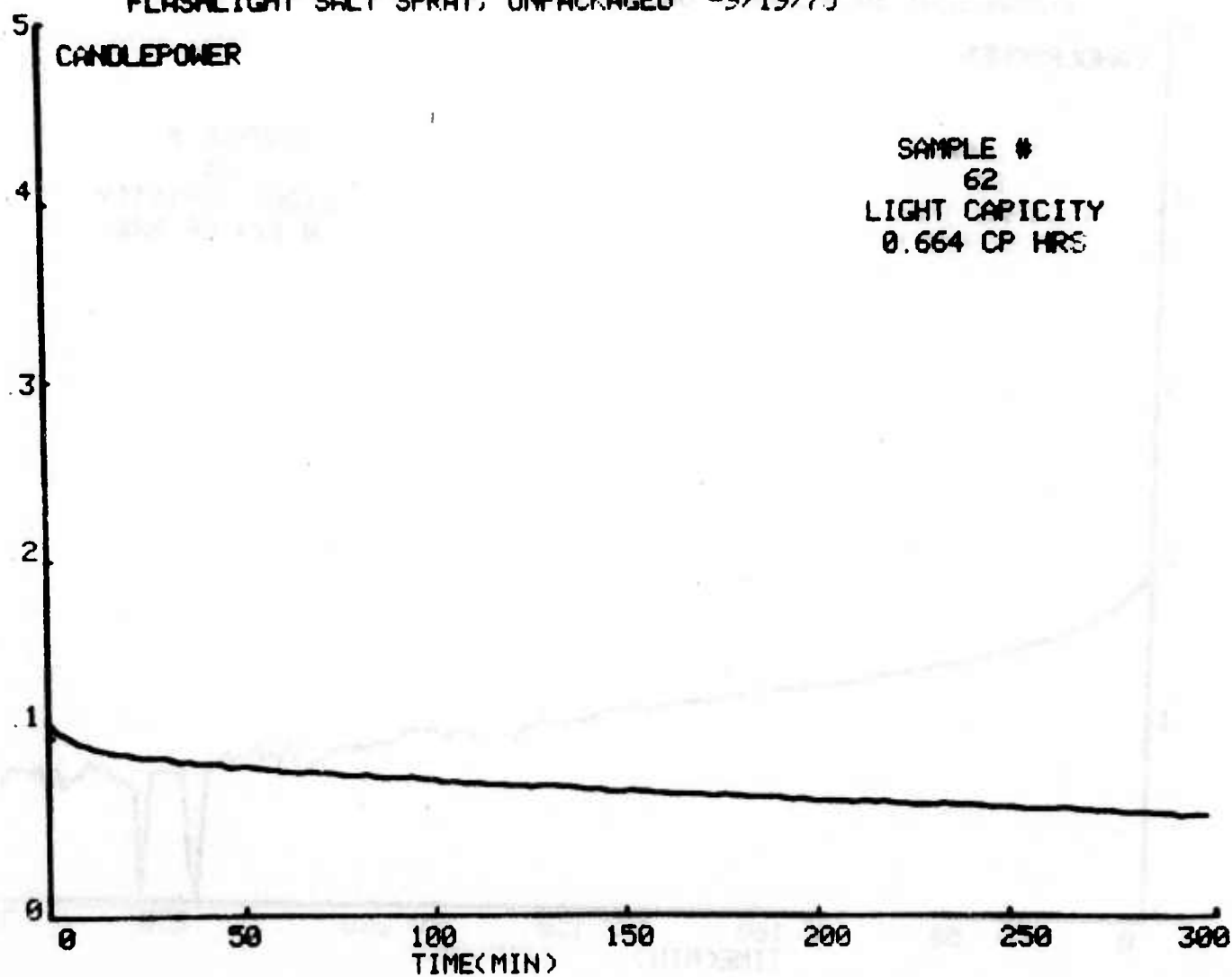
FLASHLIGHT SALT SPRAY, UNPACKAGED -9/19/75



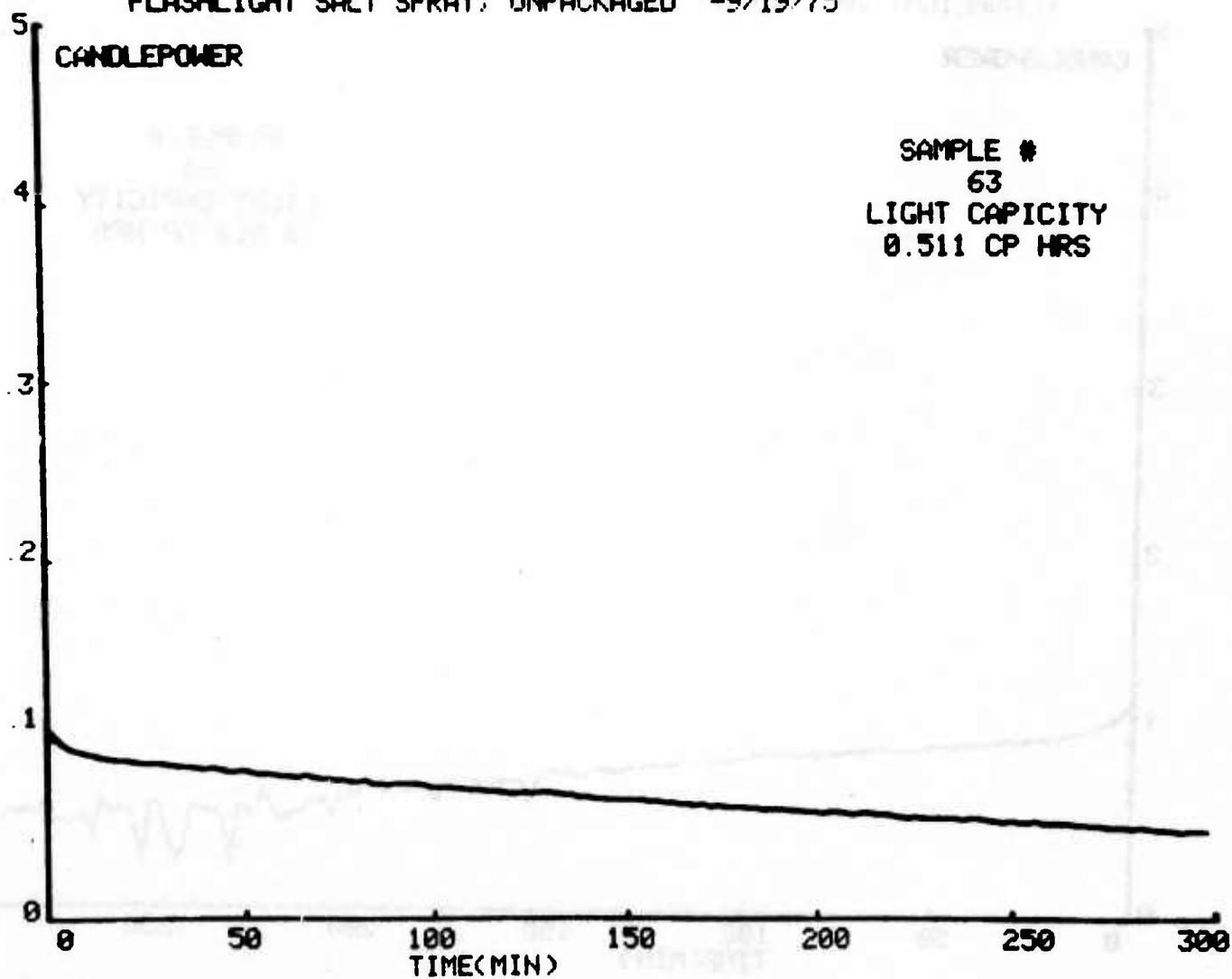




FLASHLIGHT SALT SPRAY, UNPACKAGED -9/19/75



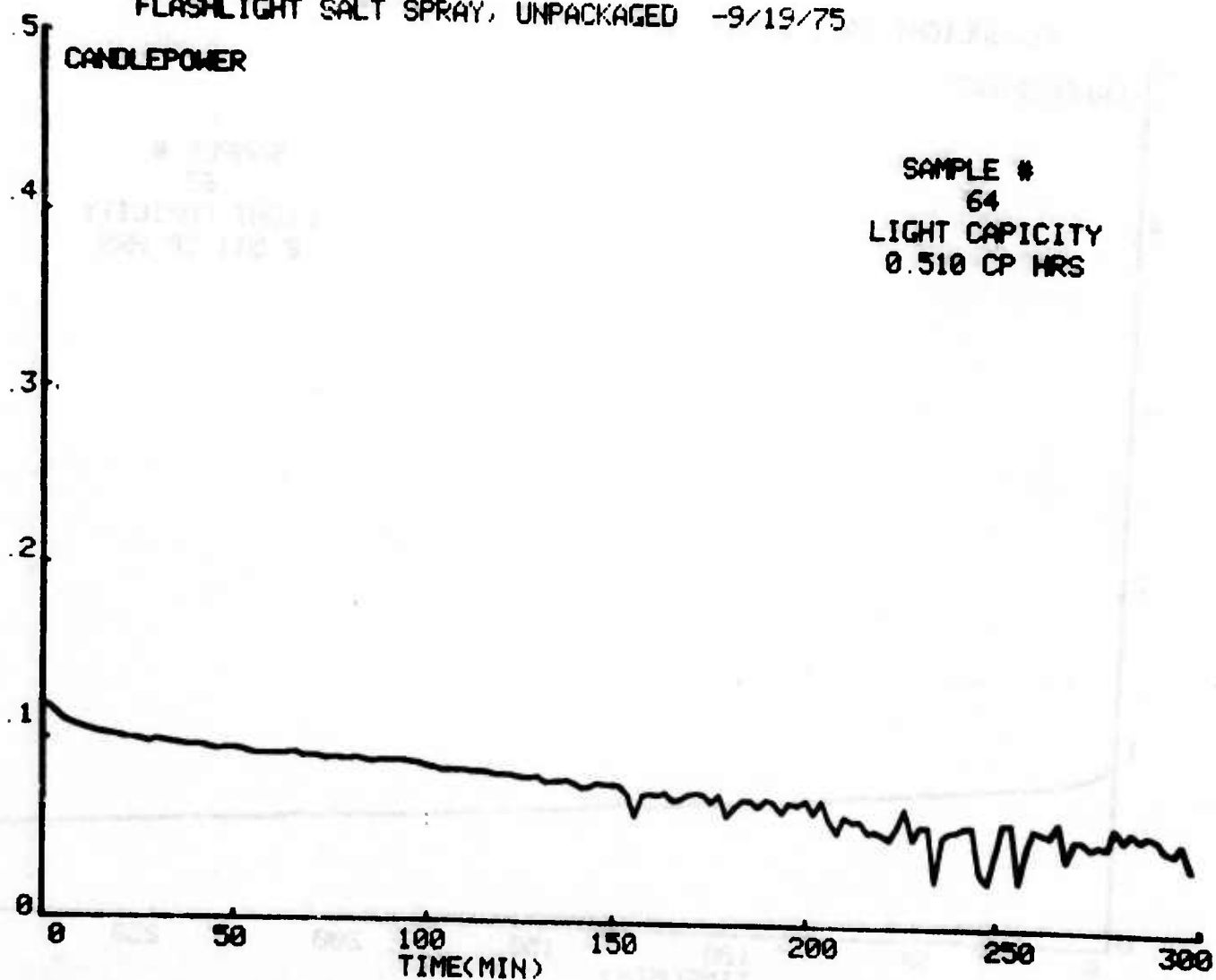
FLASHLIGHT SALT SPRAY, UNPACKAGED -9/19/75

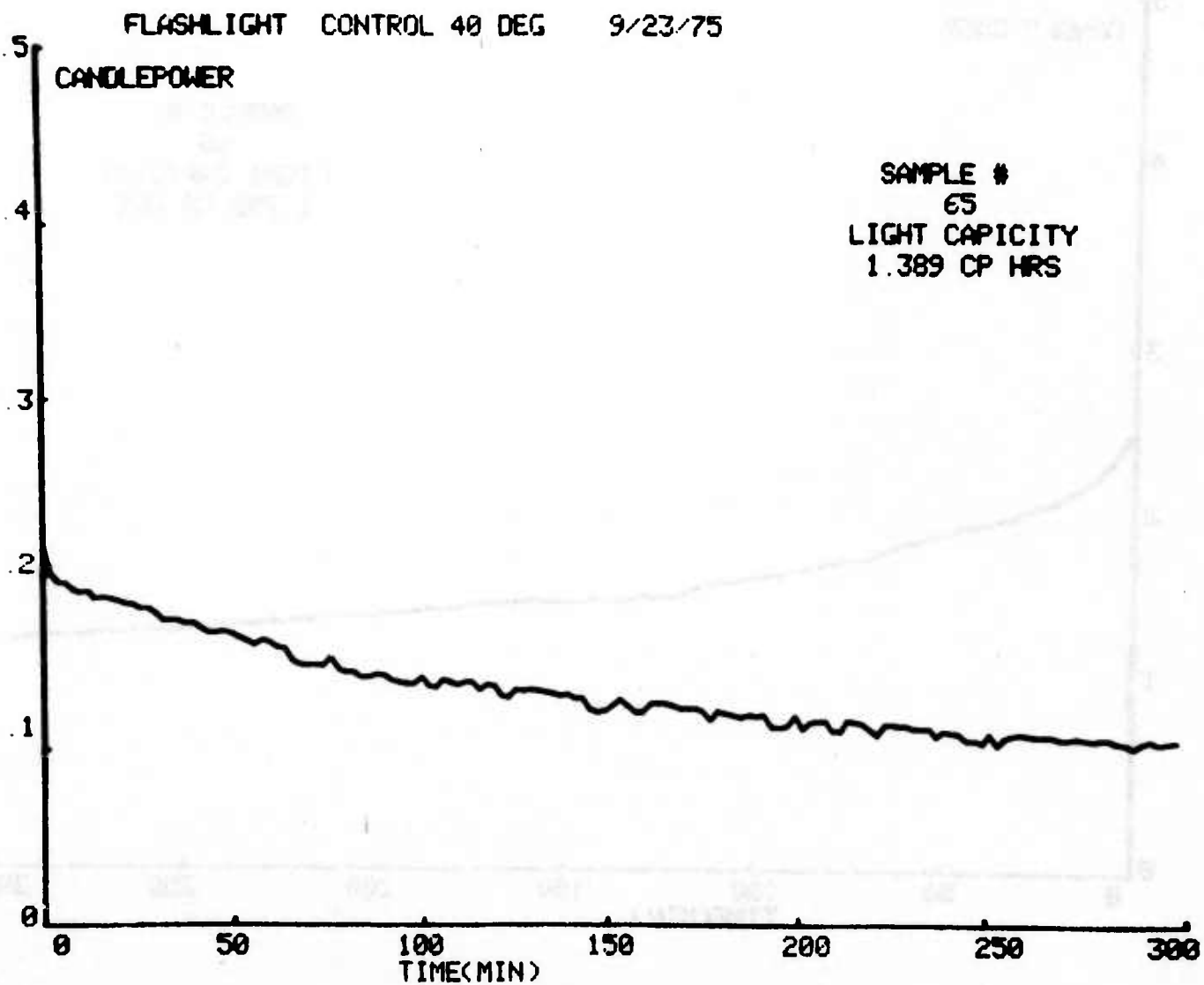


FLASHLIGHT SALT SPRAY, UNPACKAGED -9/19/75

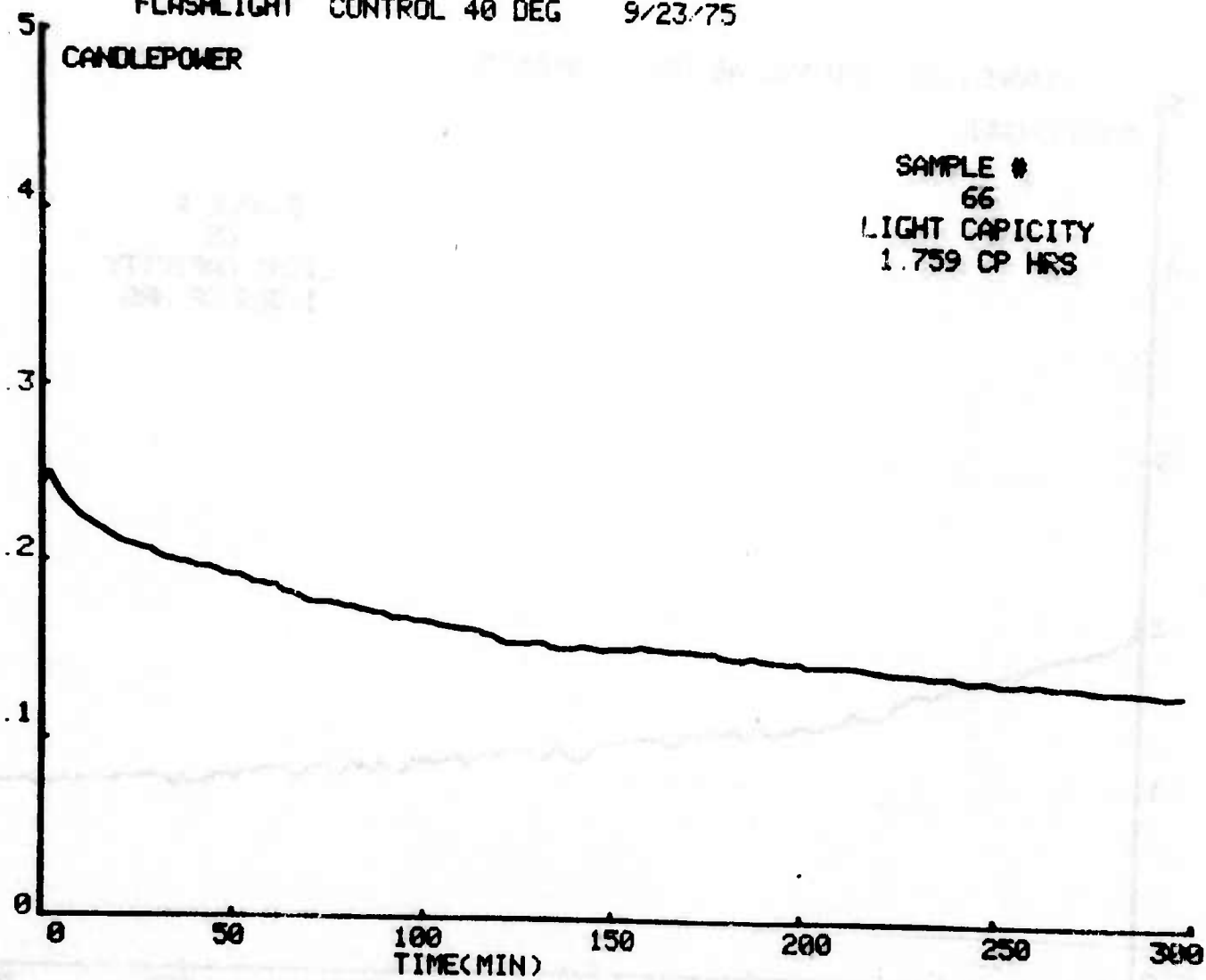
CANDLEPOWER

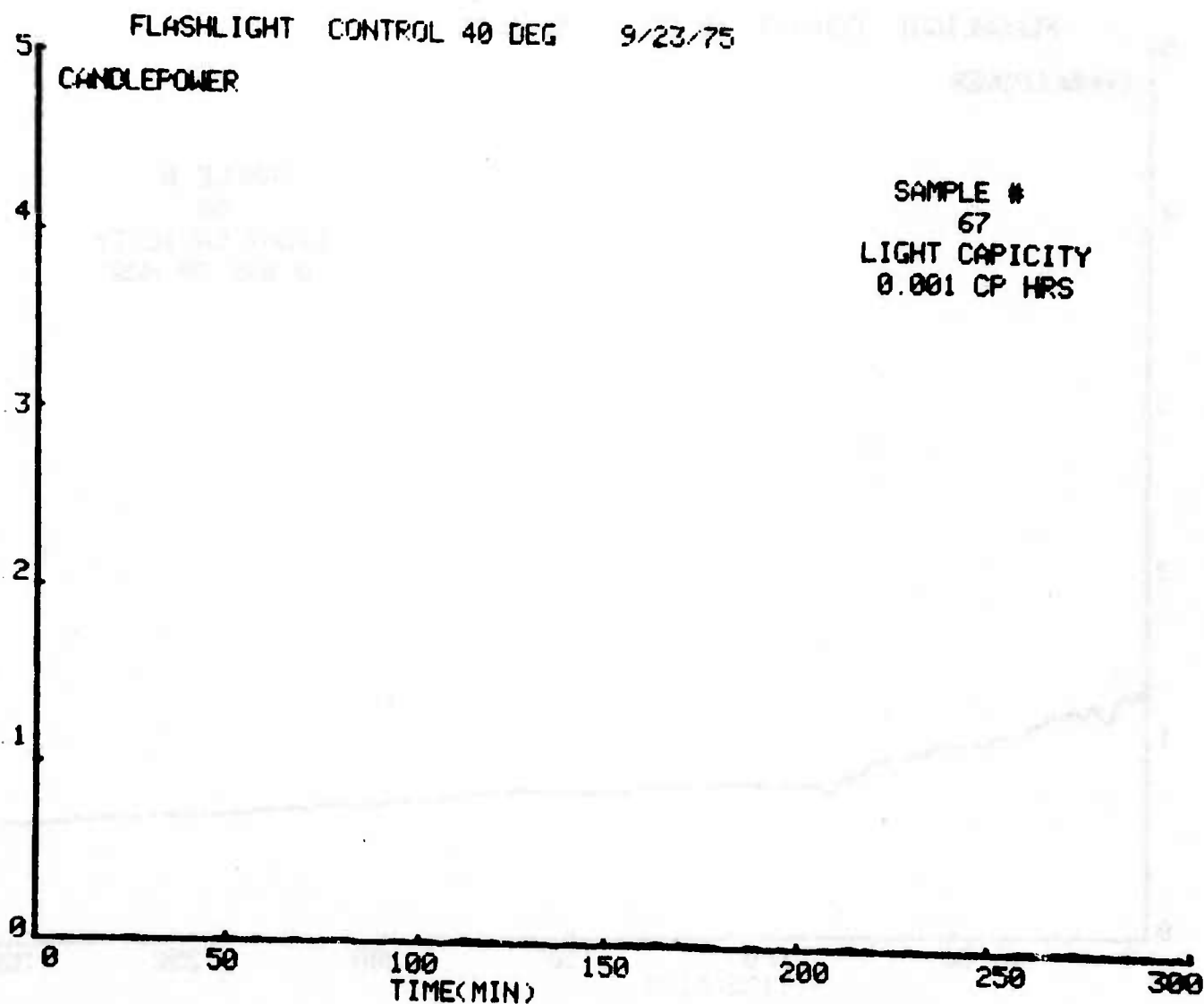
SAMPLE #  
64  
LIGHT CAPACITY  
0.510 CP HRS



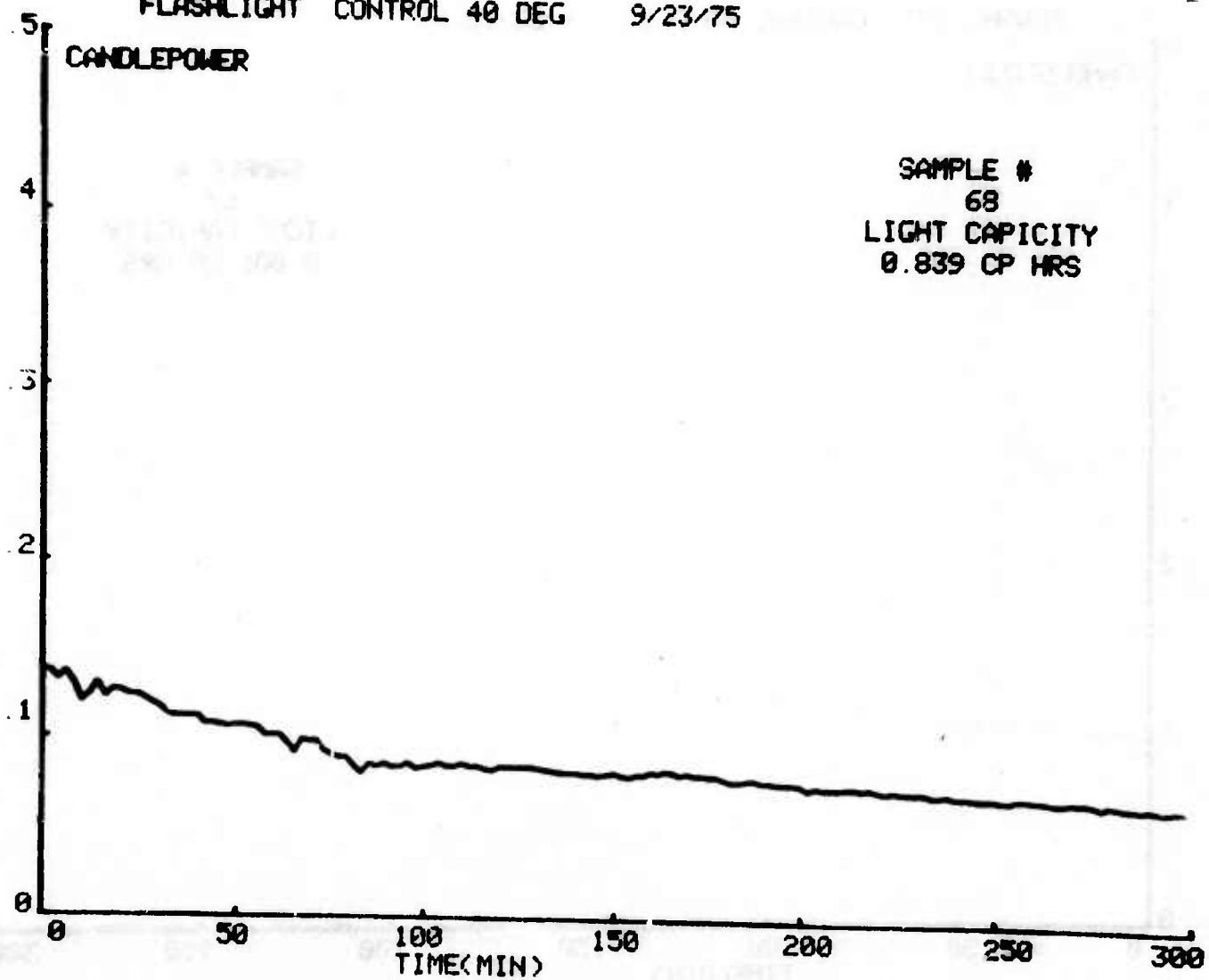


FLASHLIGHT CONTROL 40 DEG 9/23/75



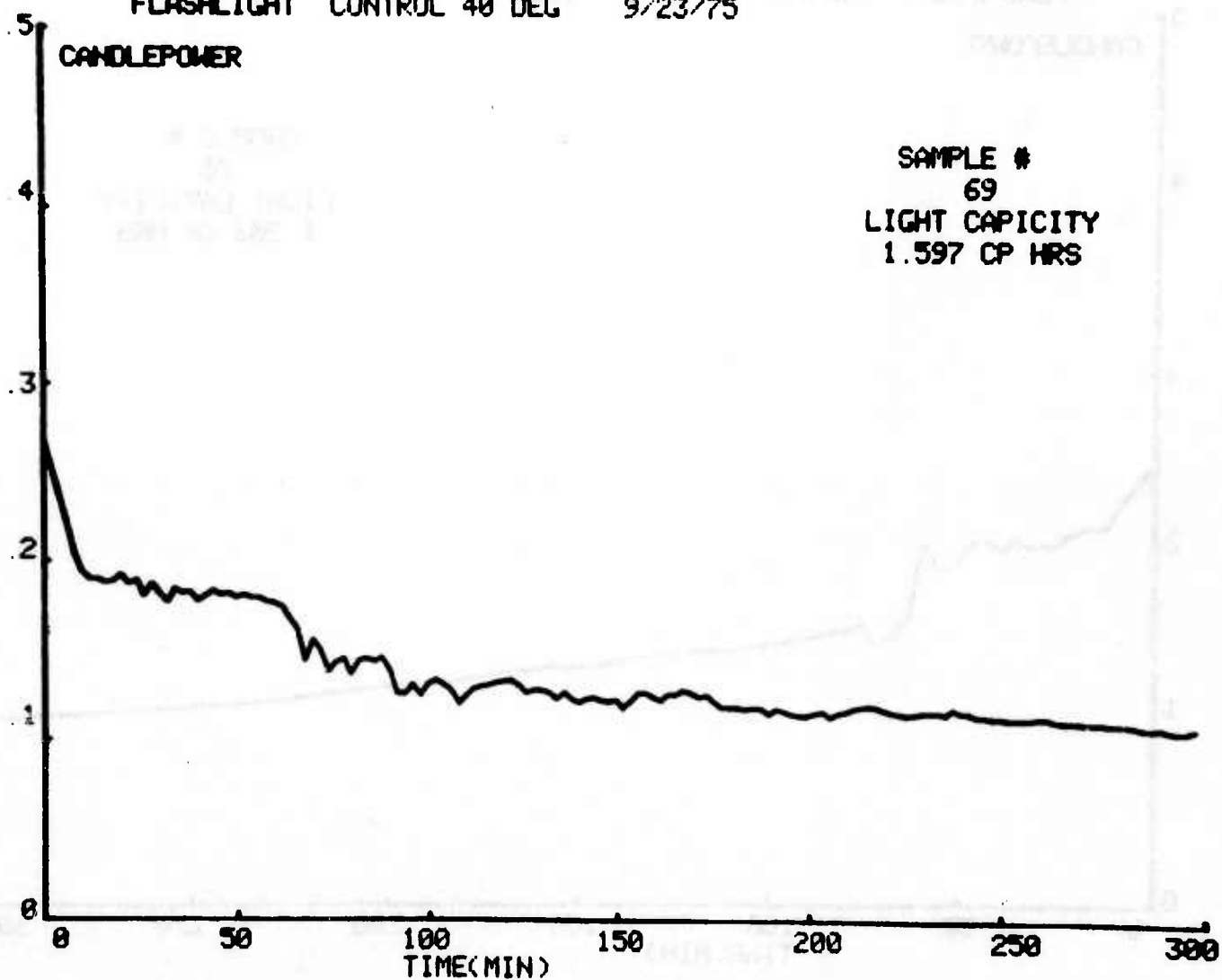


FLASHLIGHT CONTROL 40 DEG 9/23/75

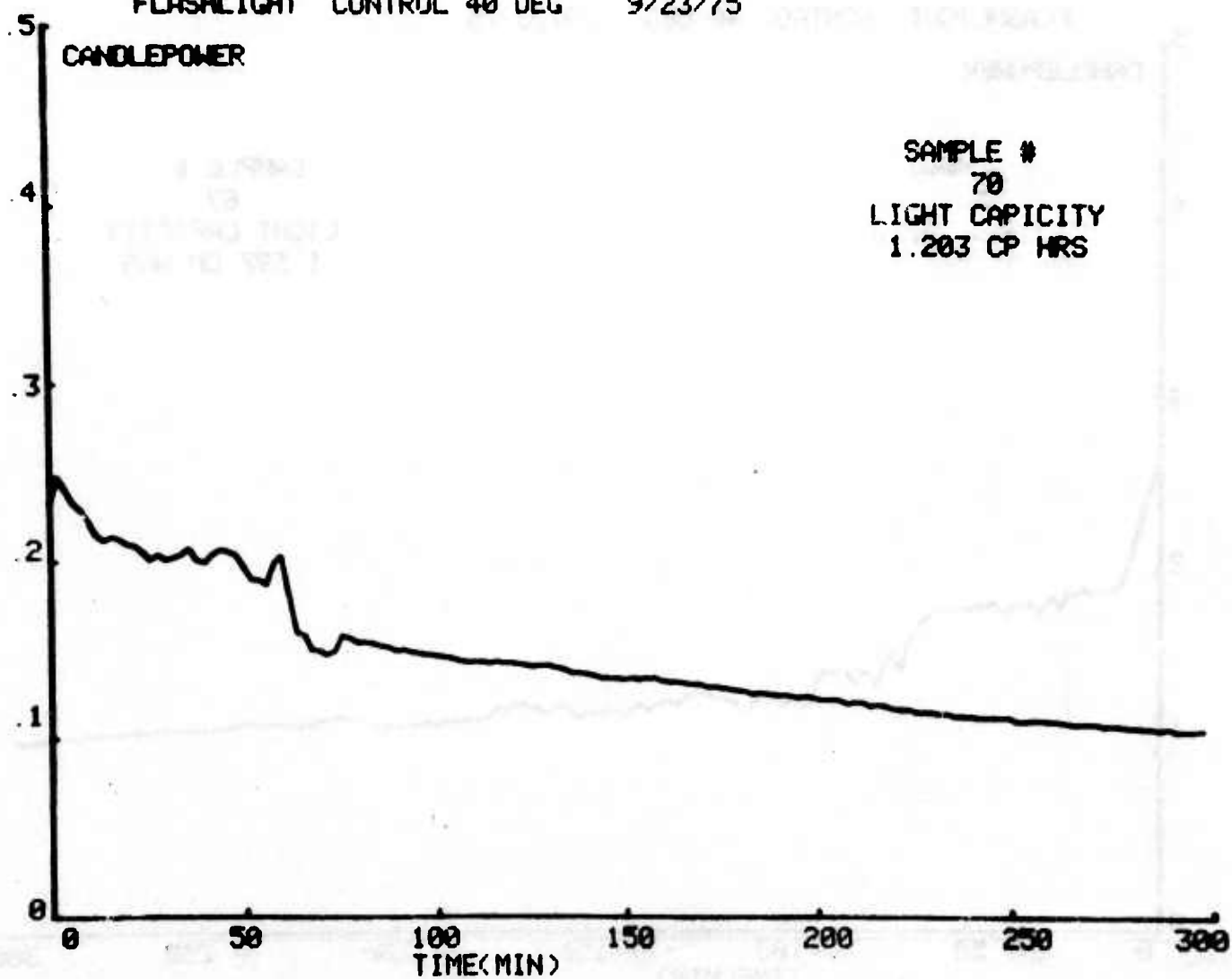


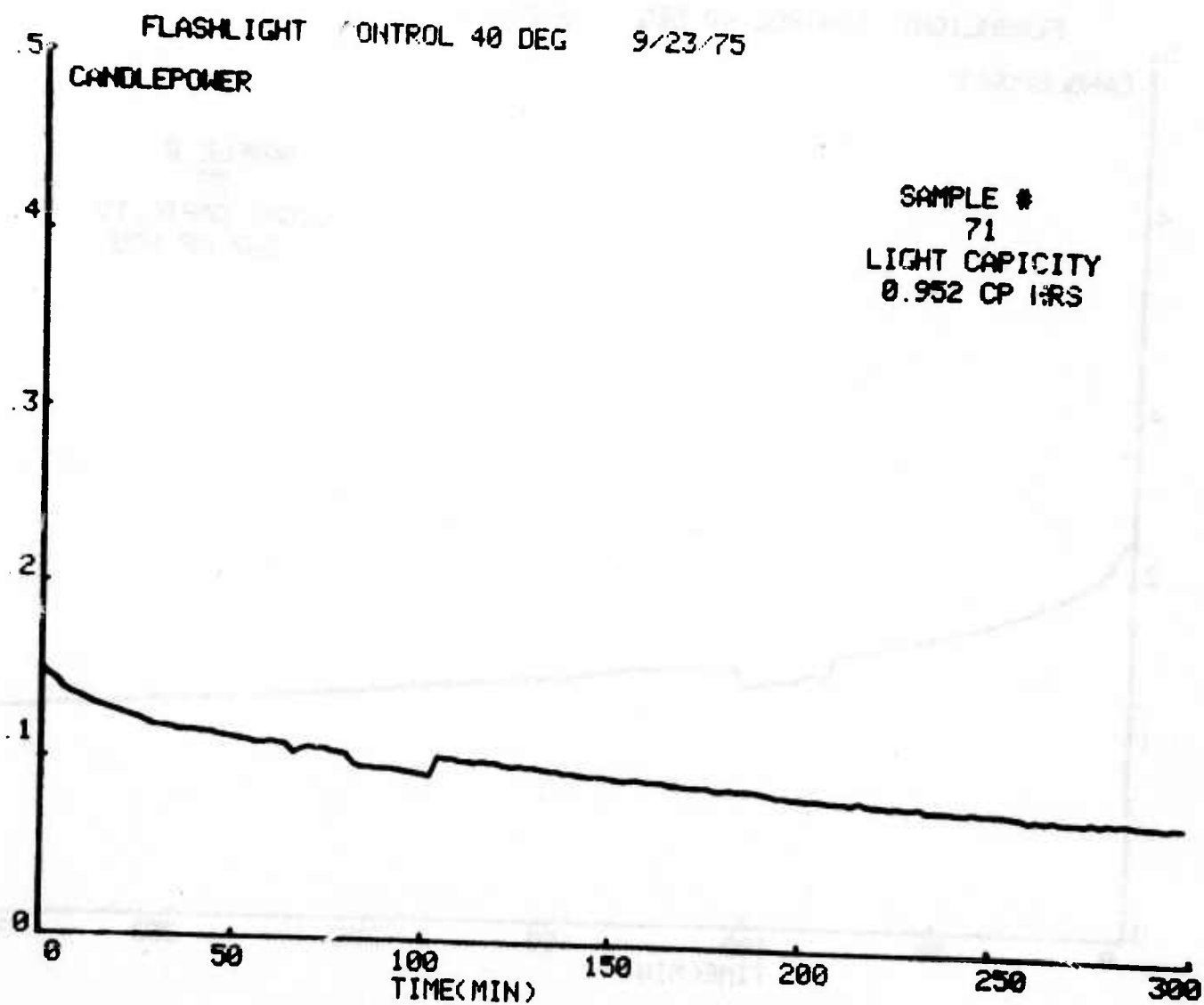


FLASHLIGHT CONTROL 40 DEG 9/23/75

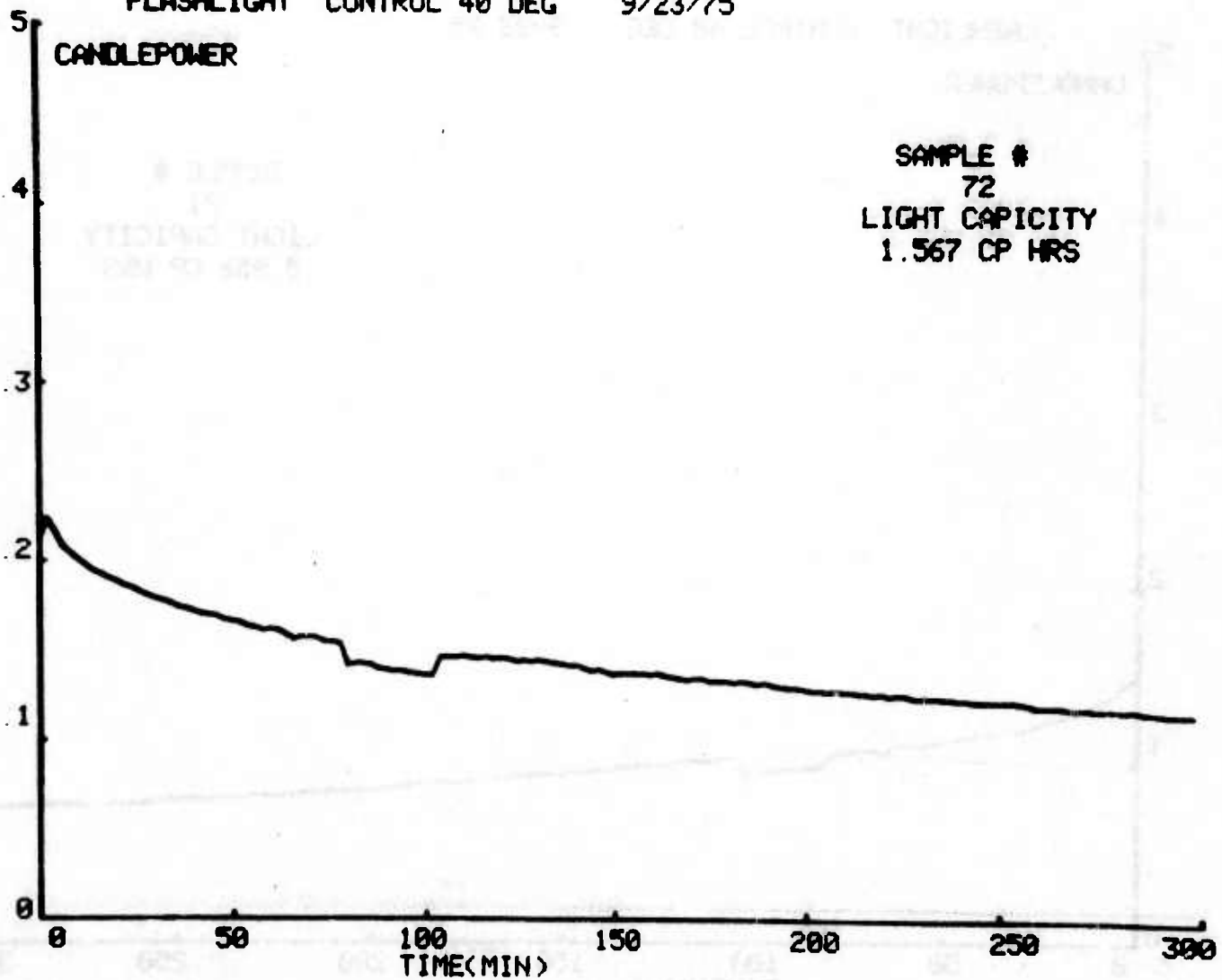


FLASHLIGHT CONTROL 40 DEG 9/23/75

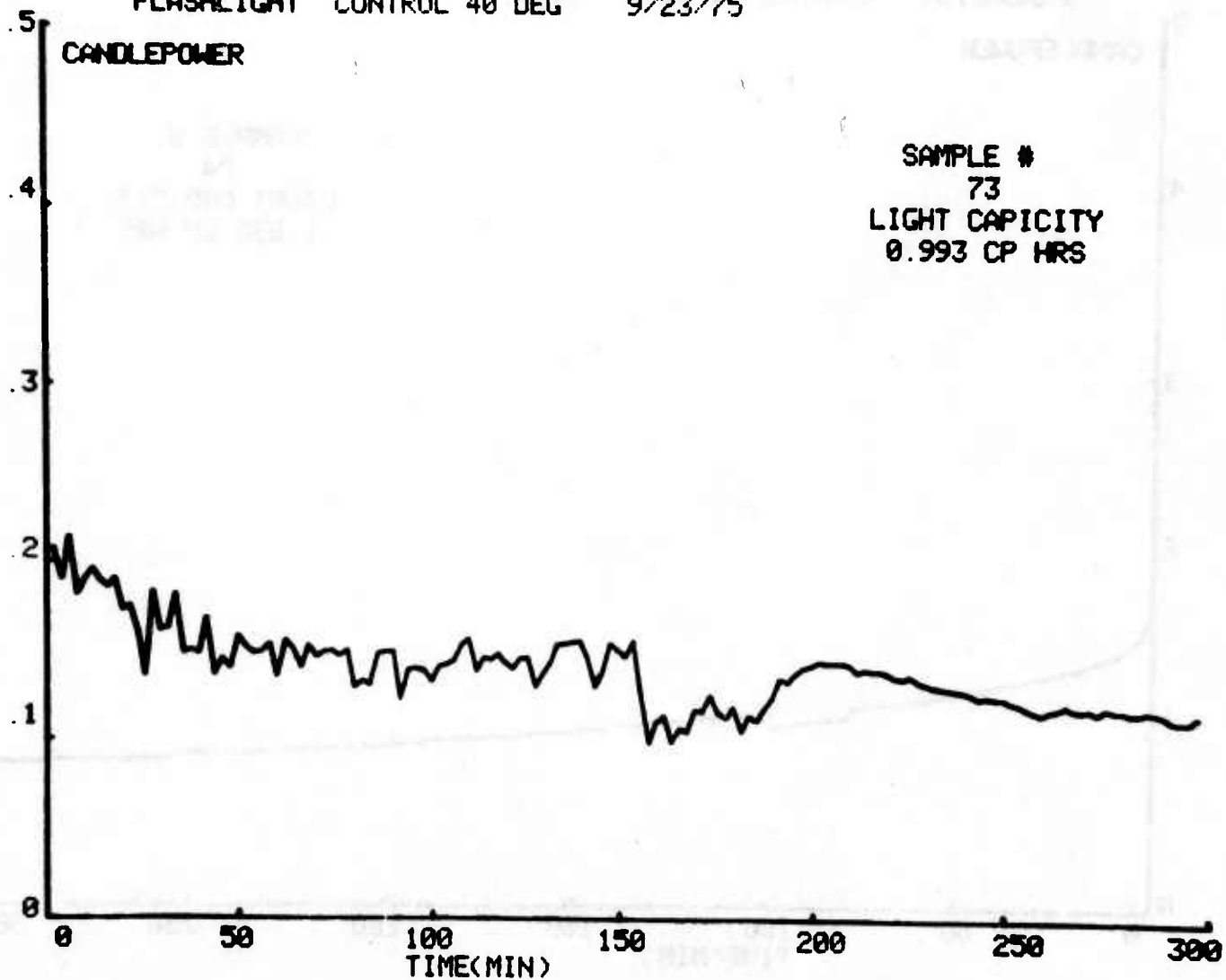




FLASHLIGHT CONTROL 40 DEG 9/23/75



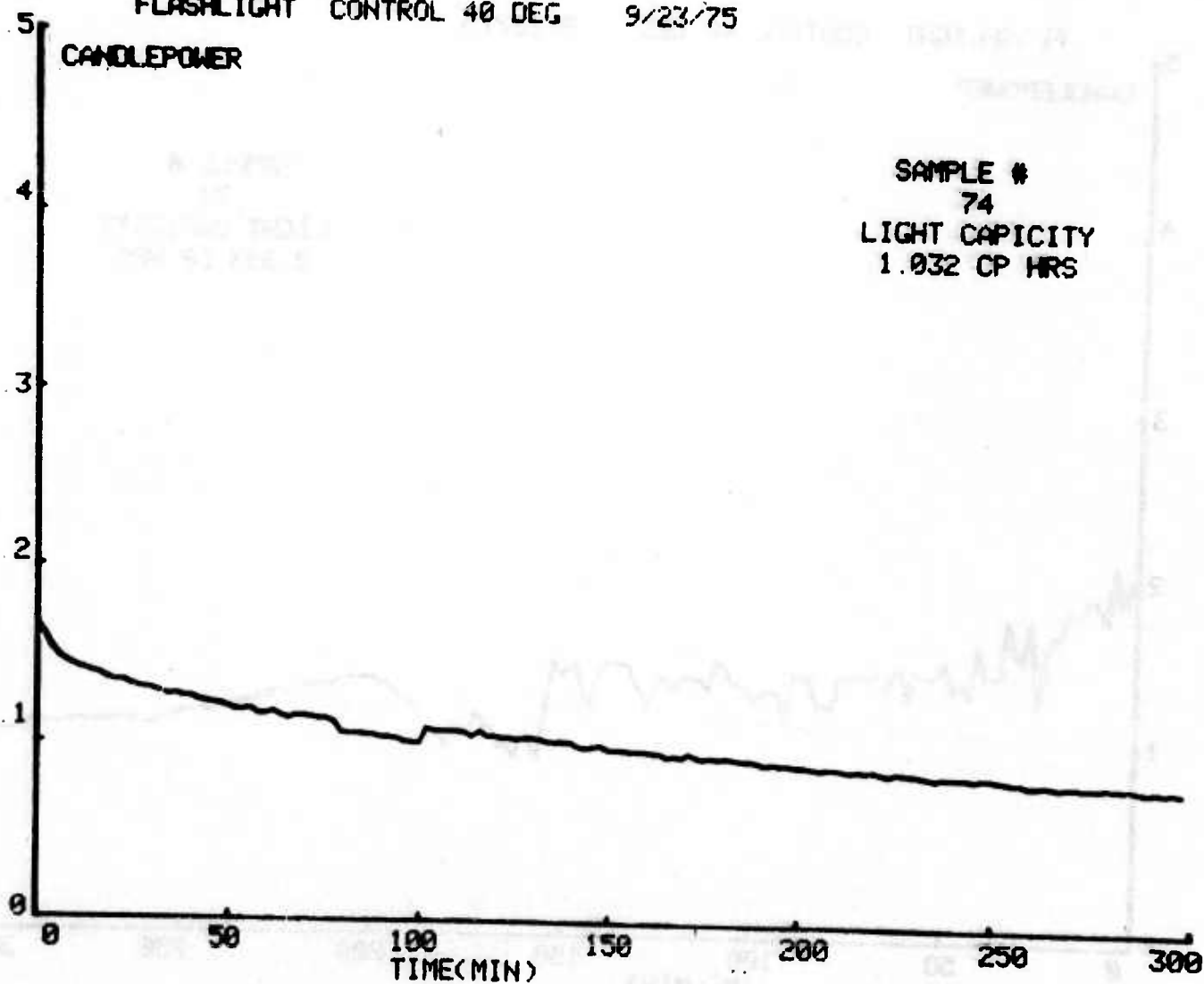
FLASHLIGHT CONTROL 40 DEG 9/23/75

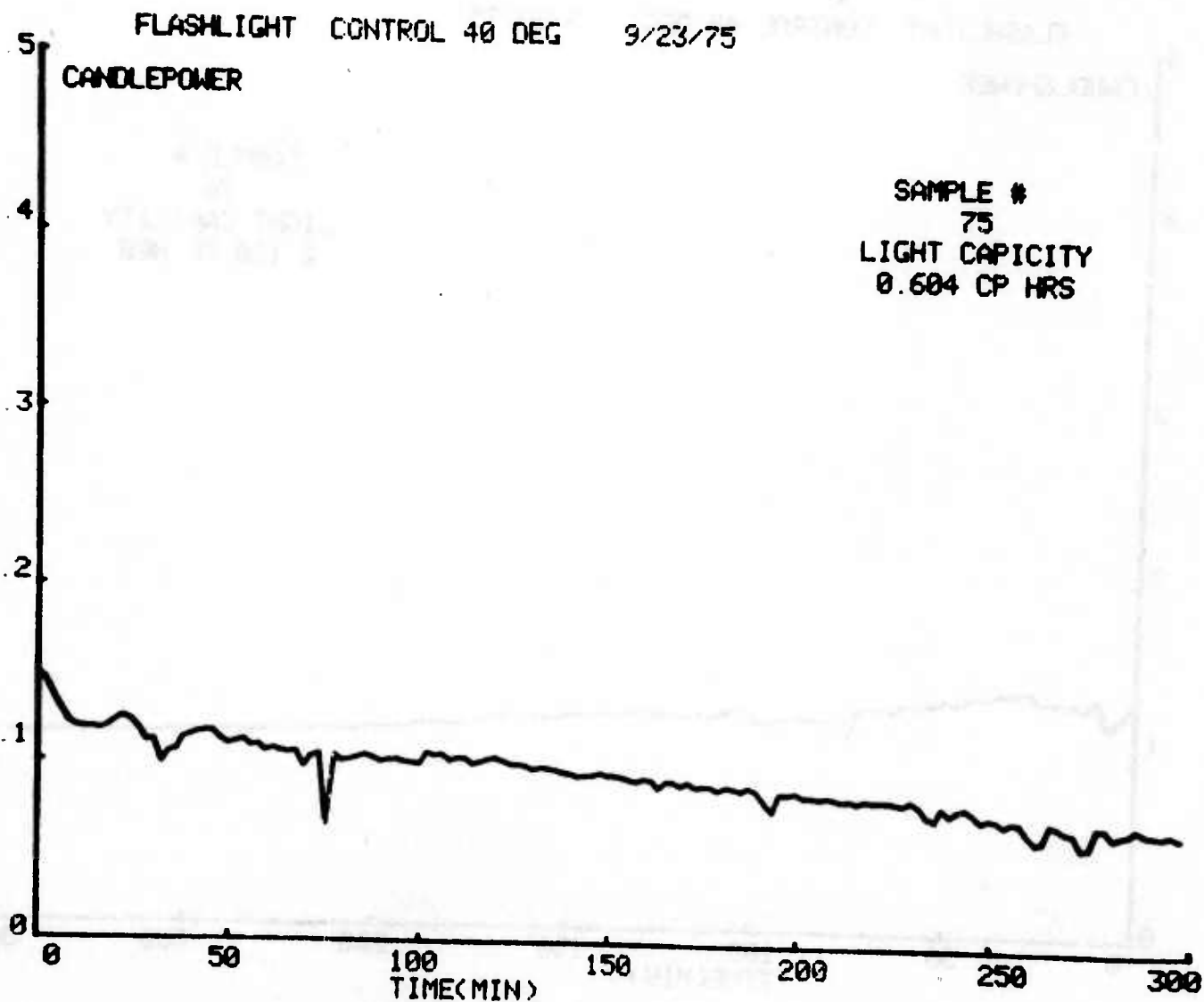


FLASHLIGHT CONTROL 40 DEG 9/23/75

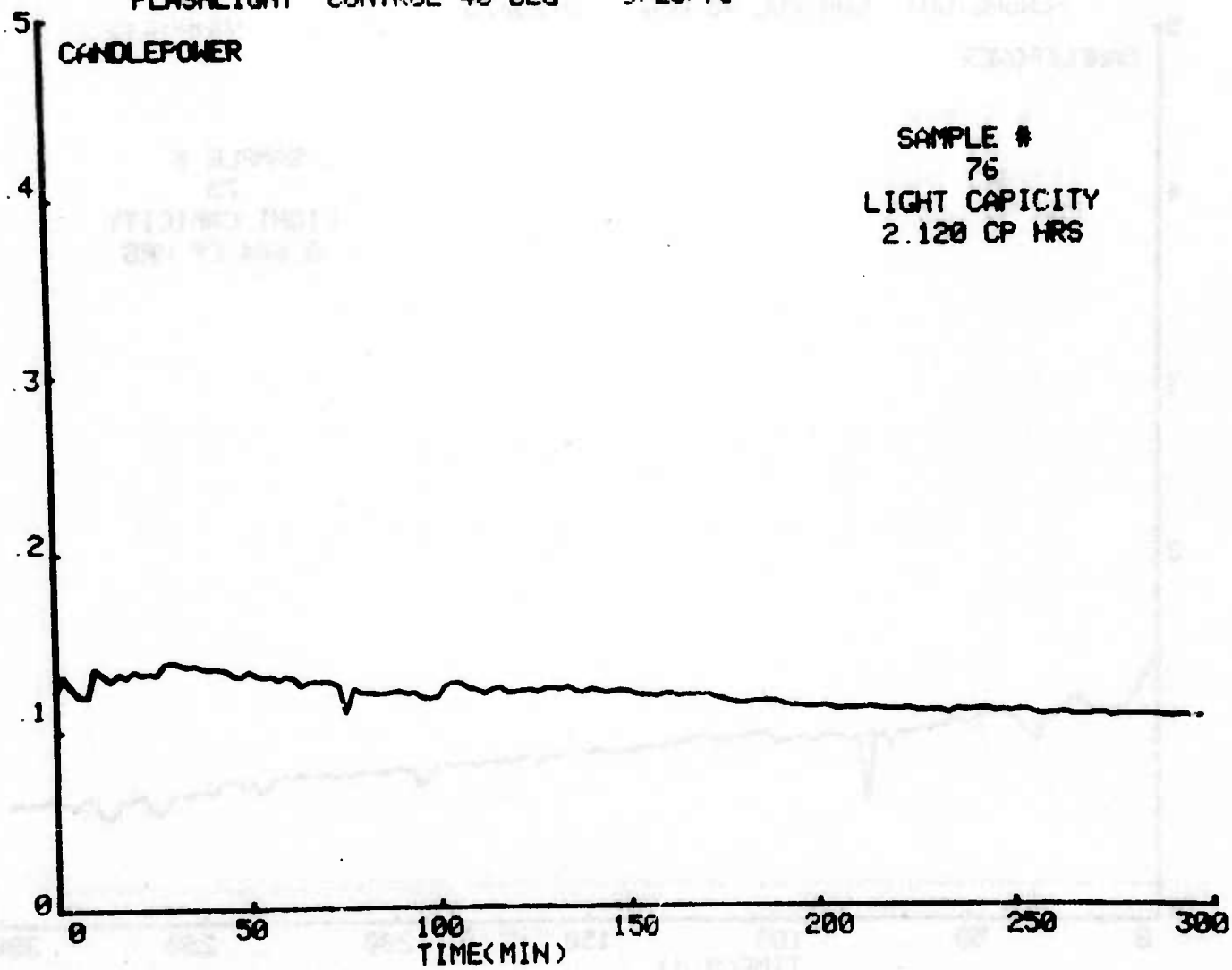
CANDLEPOWER

SAMPLE #  
74  
LIGHT CAPACITY  
1.032 CP HRS

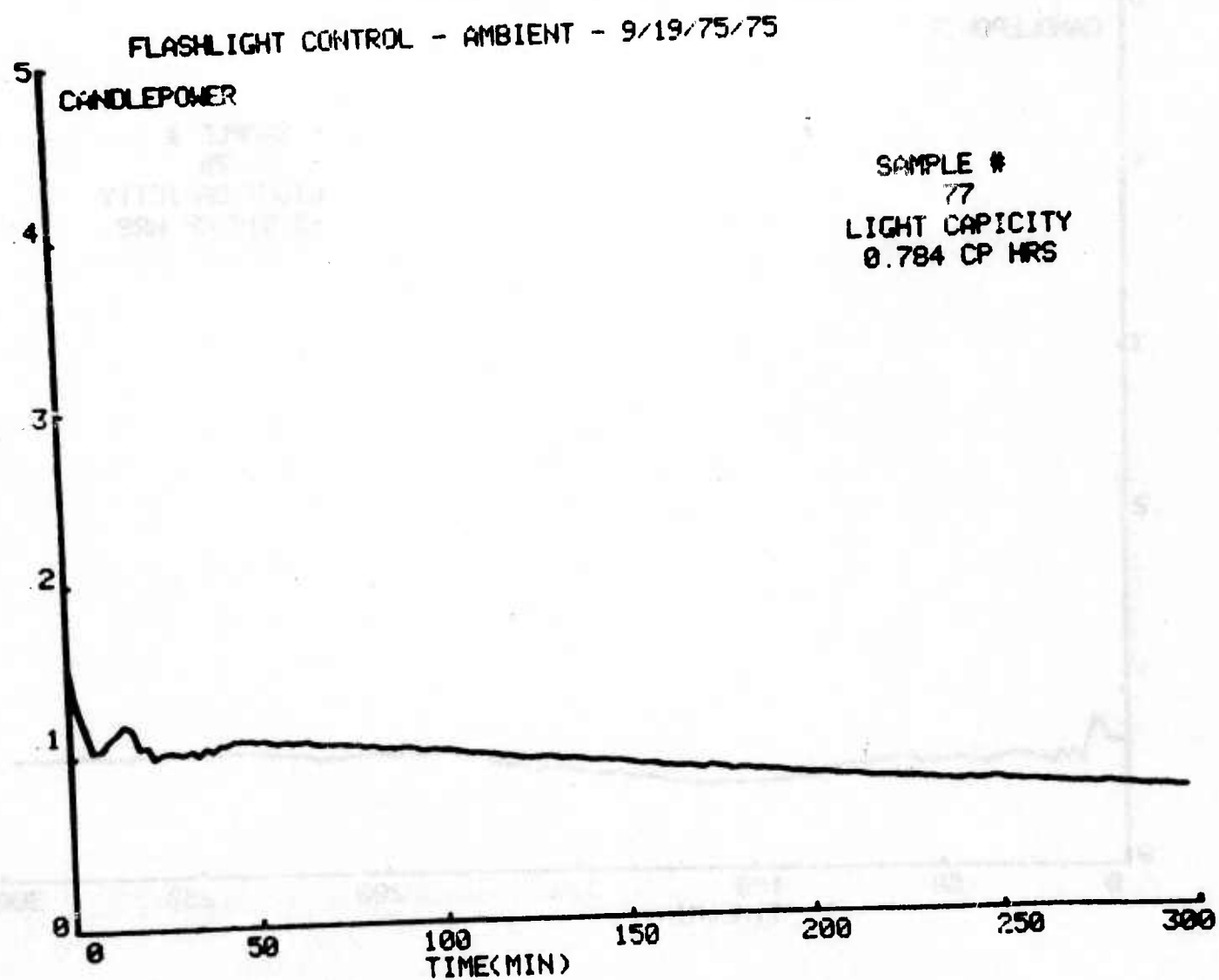




FLASHLIGHT CONTROL 40 DEG 9/23/75





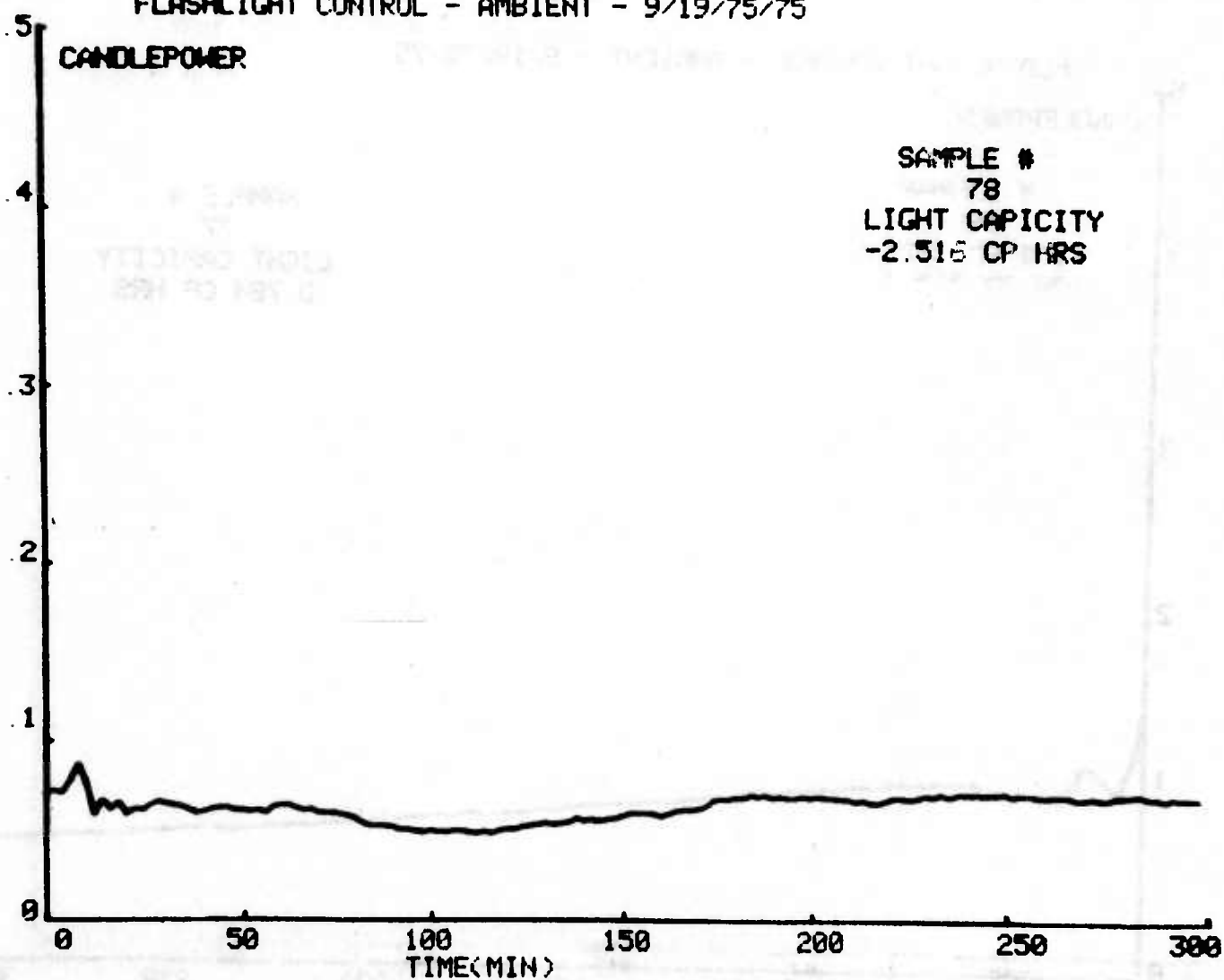


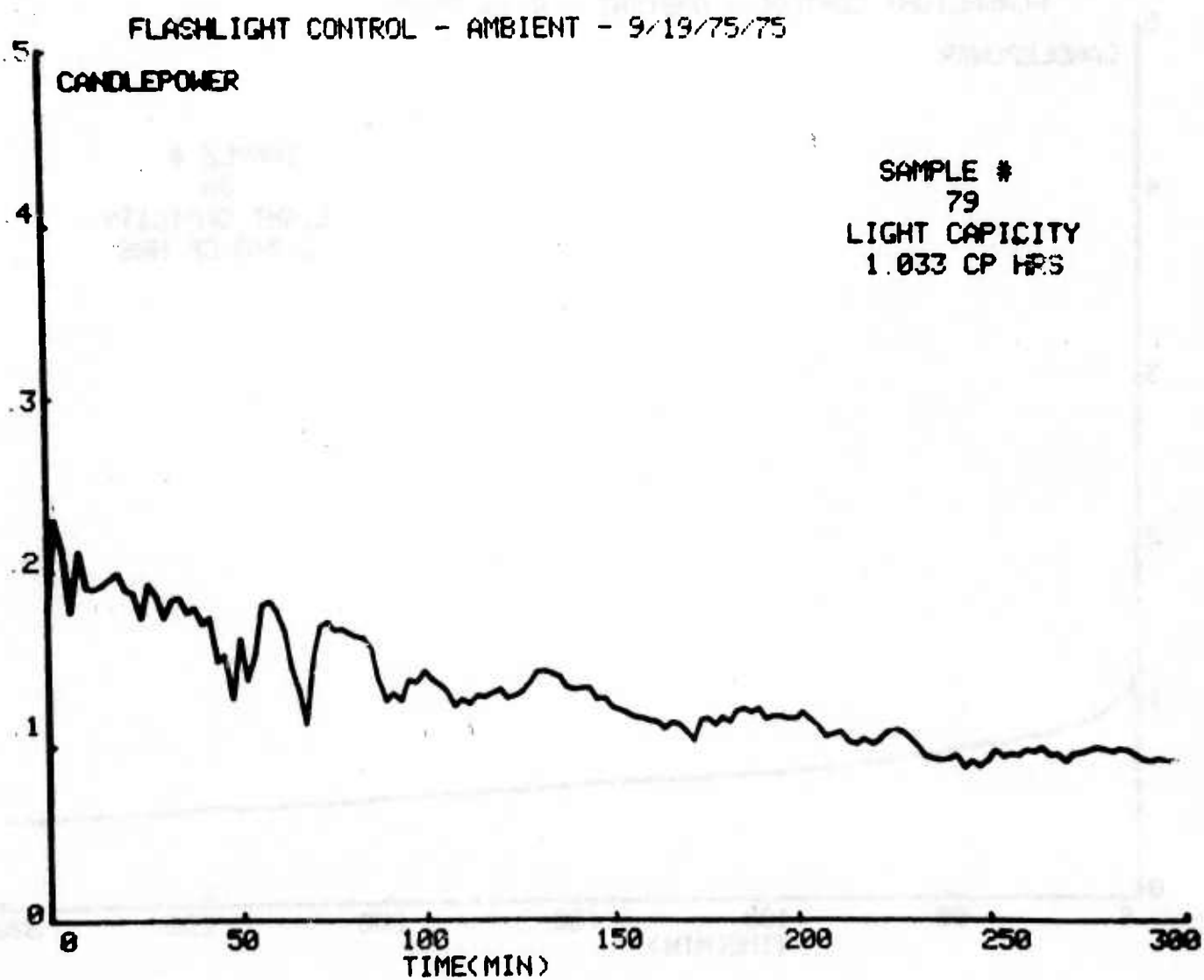
FLASHLIGHT CONTROL - AMBIENT - 9/19/75/75

CANDLEPOWER

SAMPLE #  
78

LIGHT CAPACITY  
-2.516 CP HRS

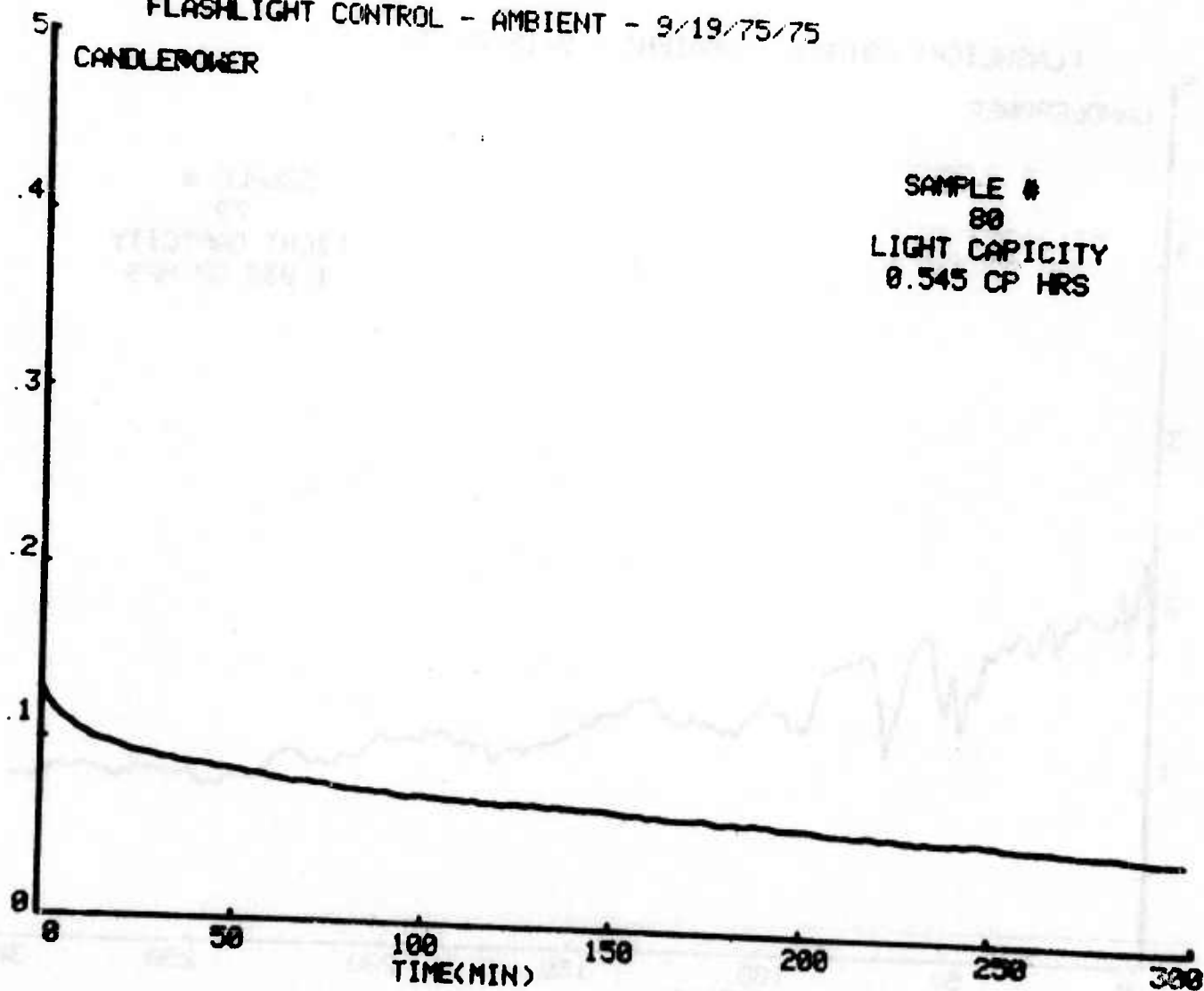




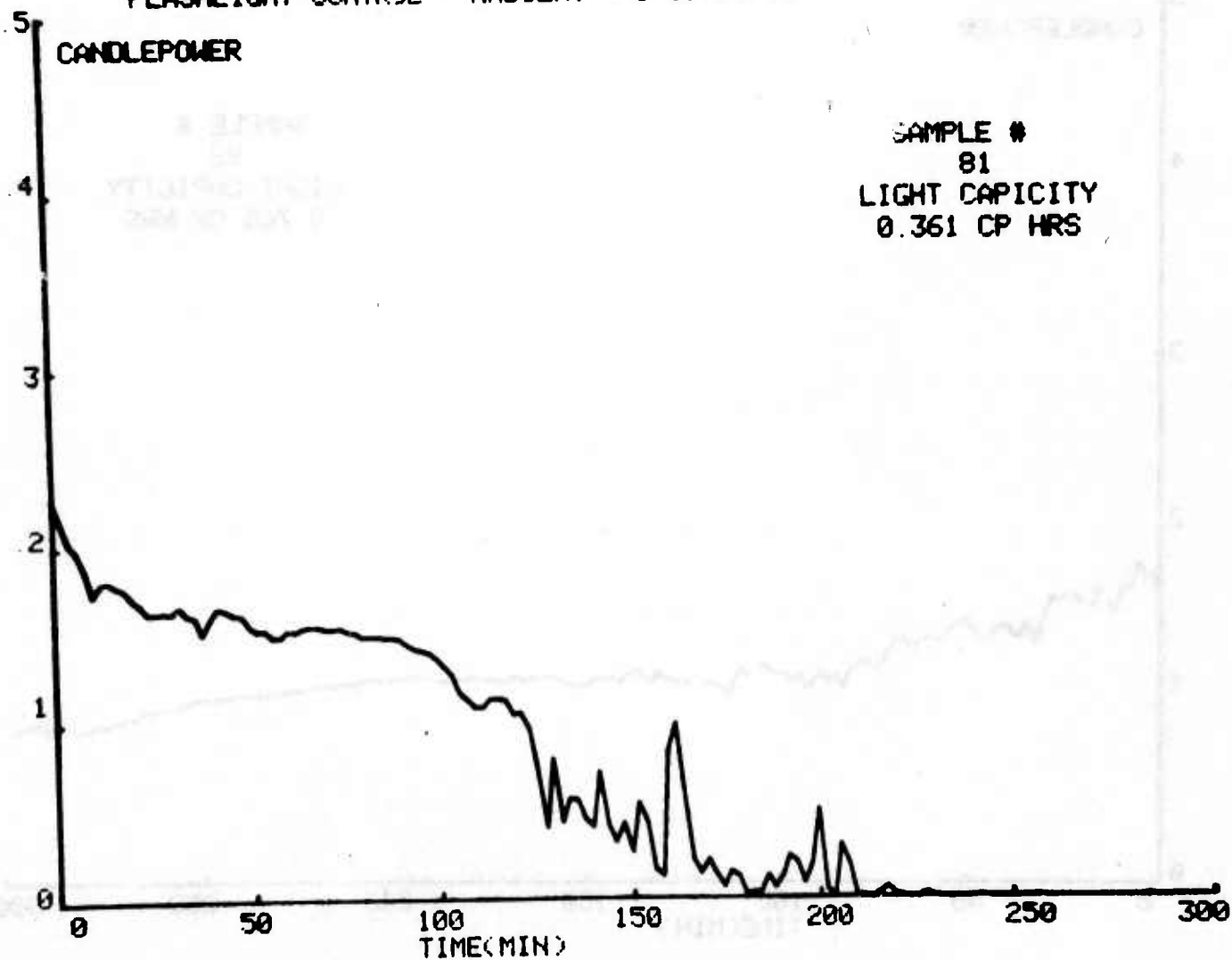
FLASHLIGHT CONTROL - AMBIENT - 9/19/75/75

CANDLEROWER

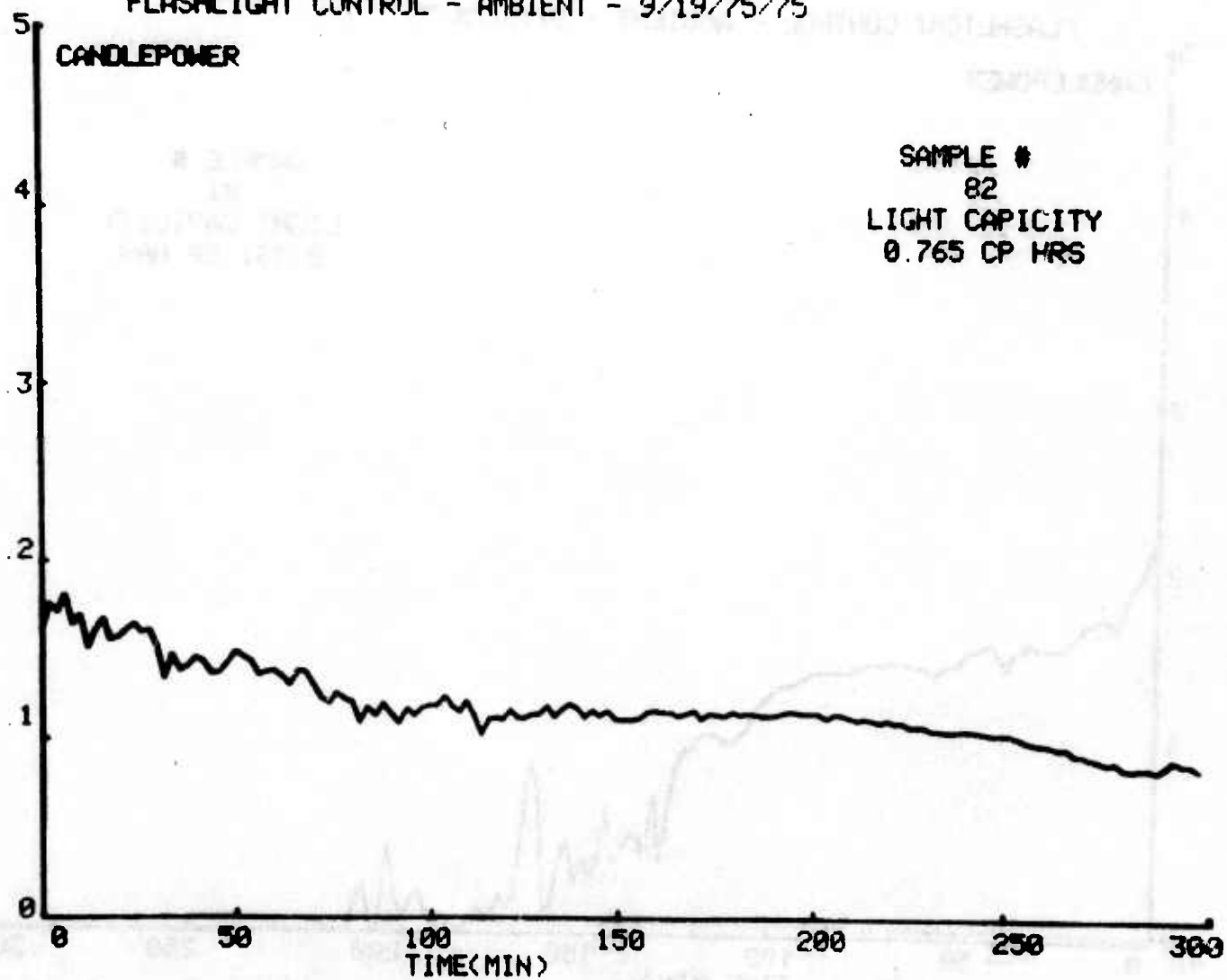
SAMPLE #  
80  
LIGHT CAPACITY  
0.545 CP HRS



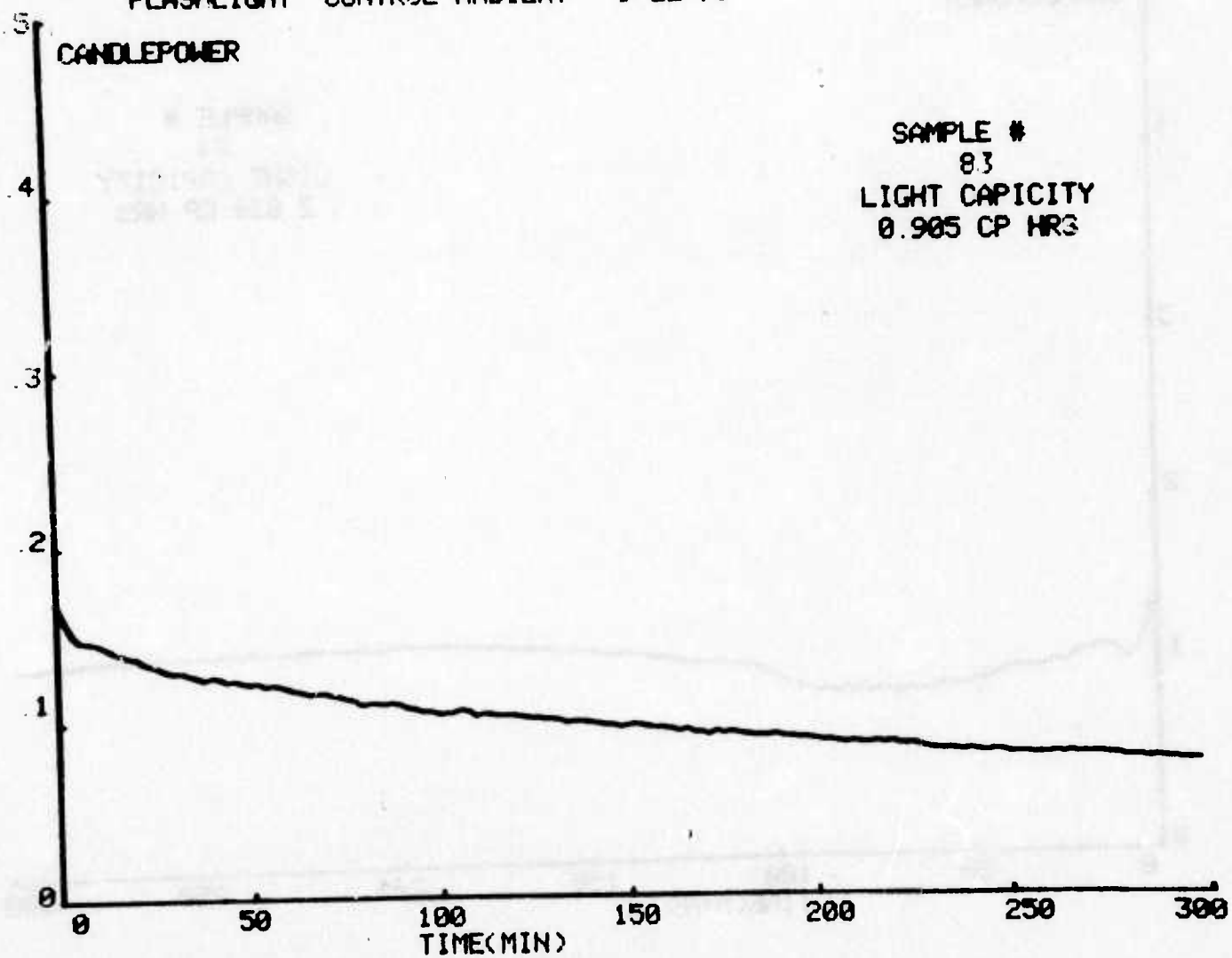
FLASHLIGHT CONTROL - AMBIENT - 9/19/75/75

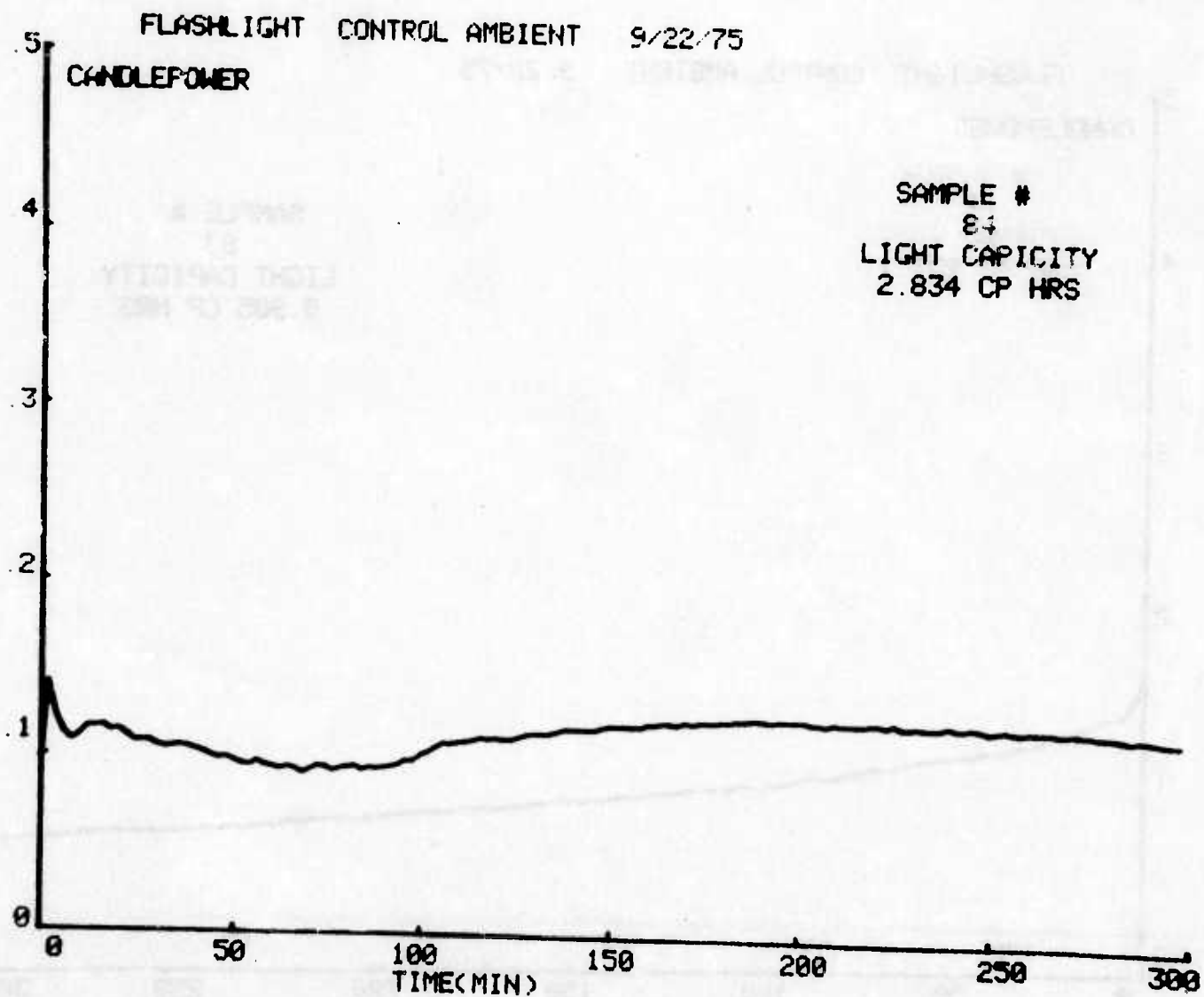


FLASHLIGHT CONTROL - AMBIENT - 9/19/75/75



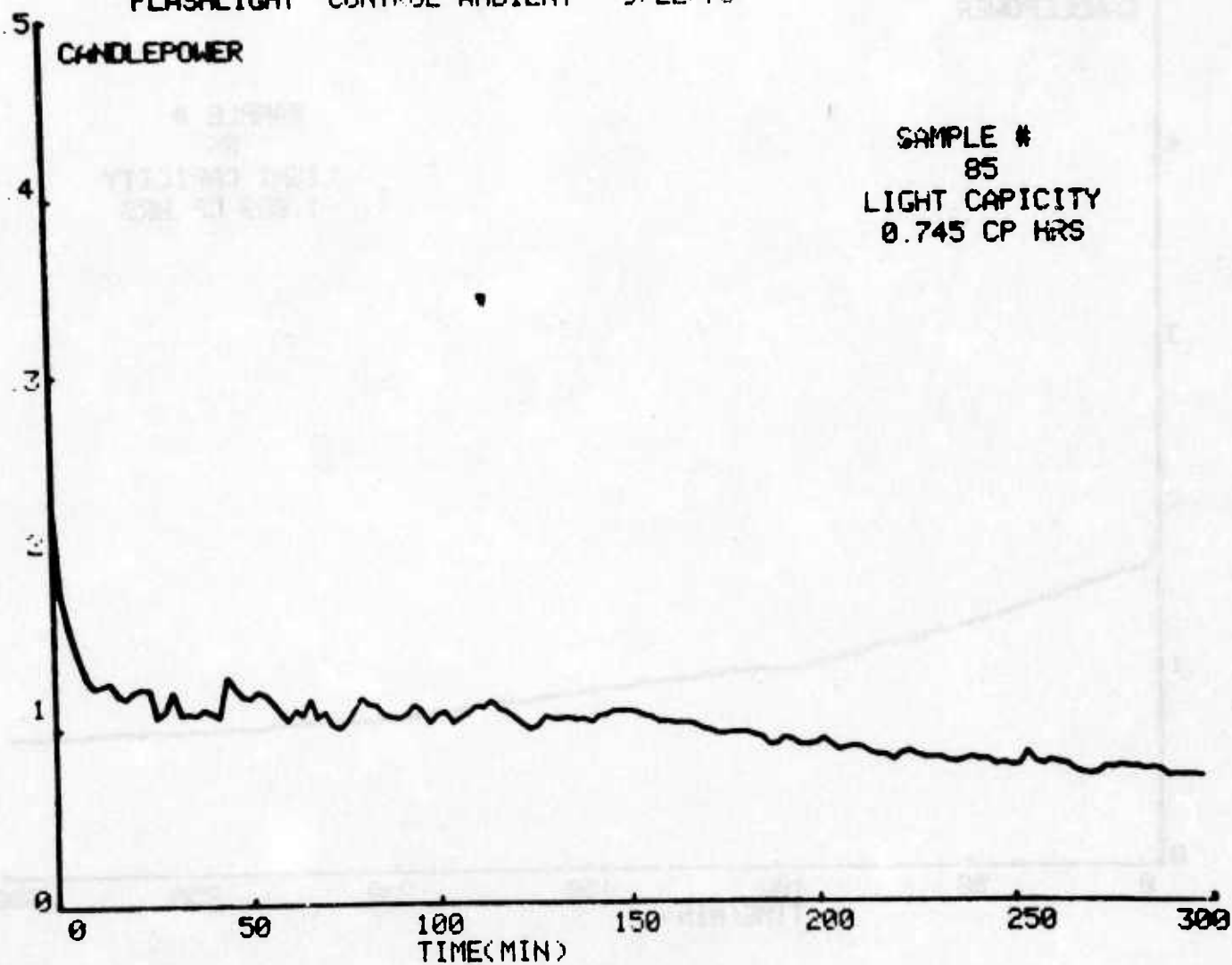
FLASHLIGHT CONTROL AMBIENT 9/22/75



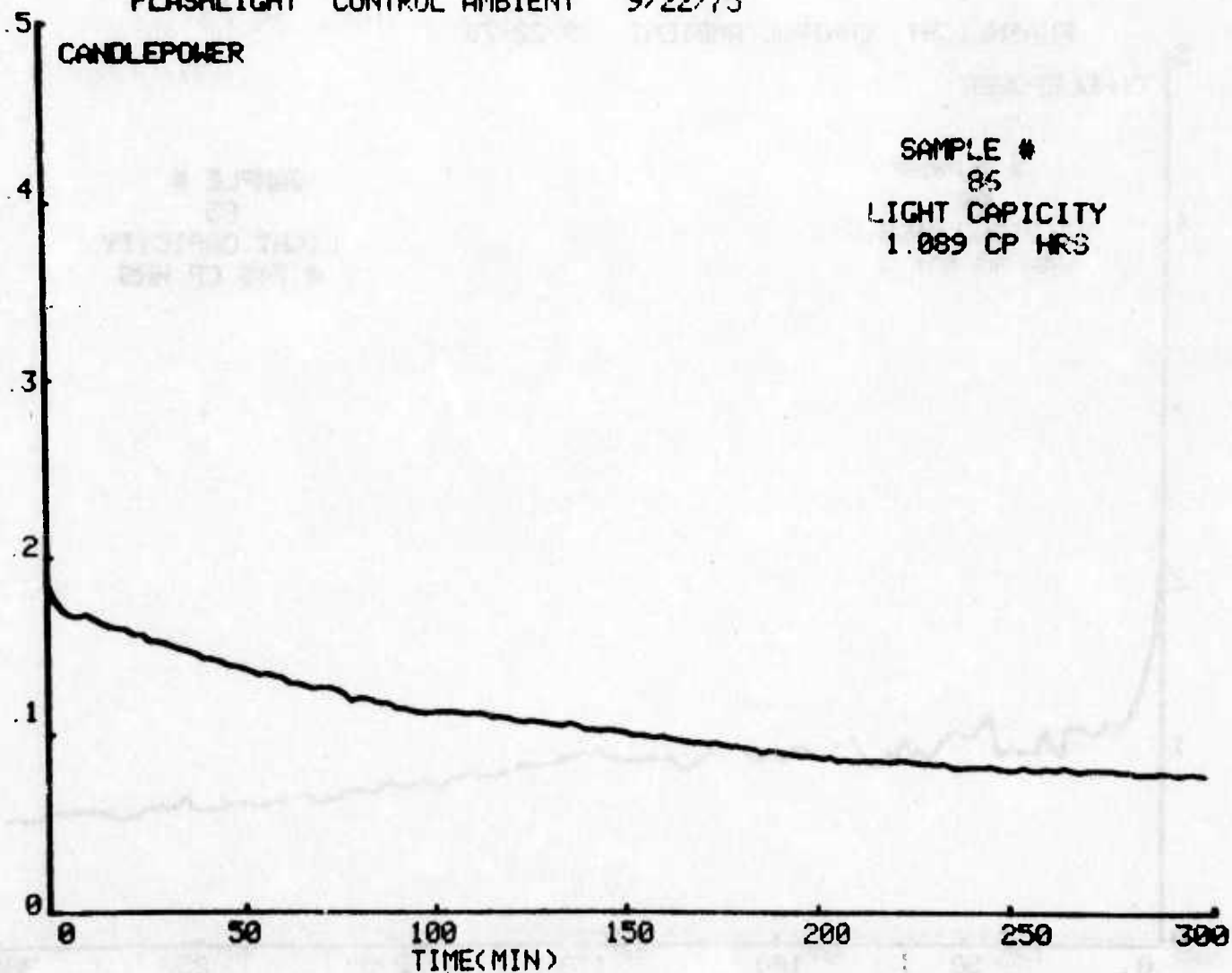




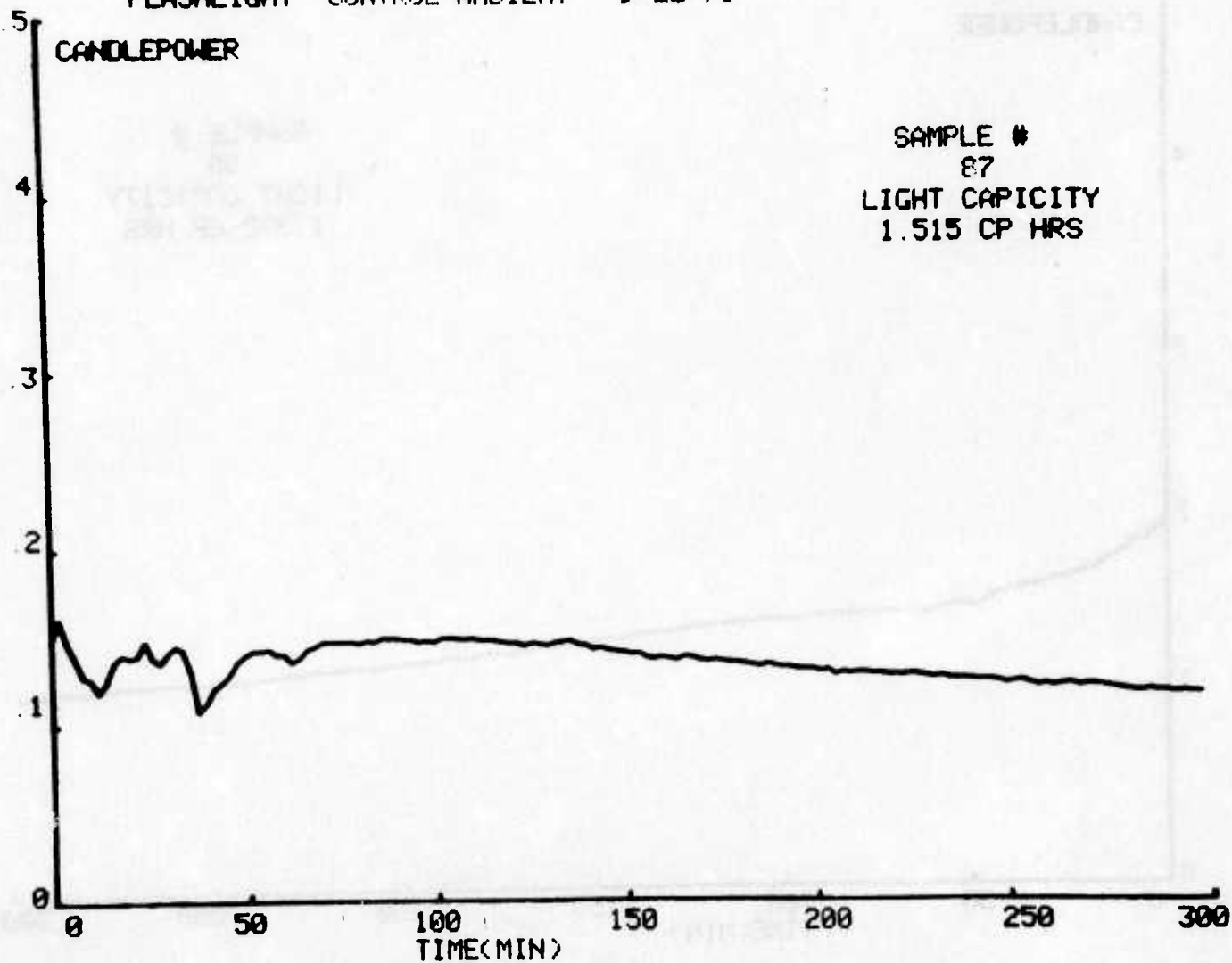
FLASHLIGHT CONTROL AMBIENT 9/22/75



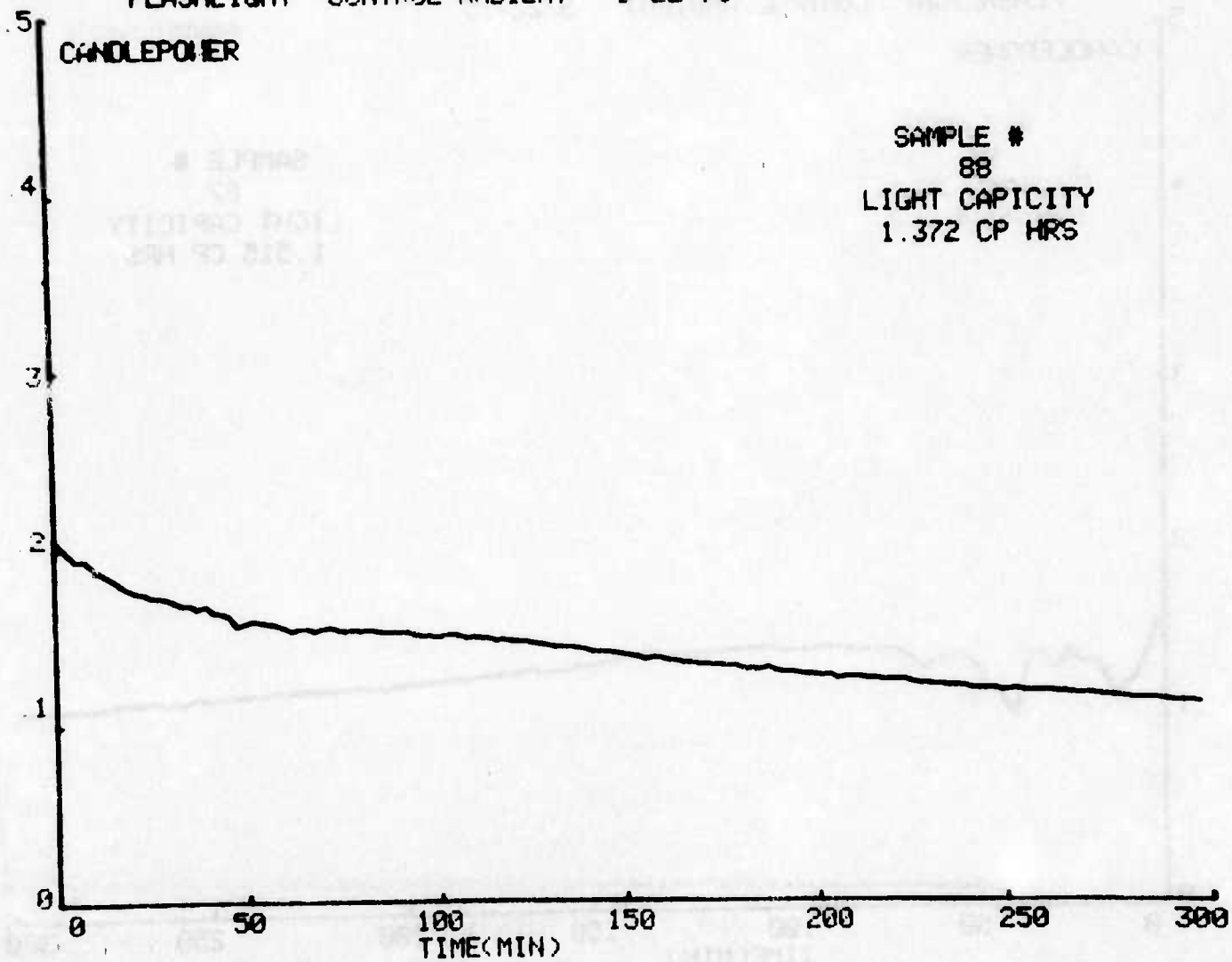
FLASHLIGHT CONTROL AMBIENT 9/22/75

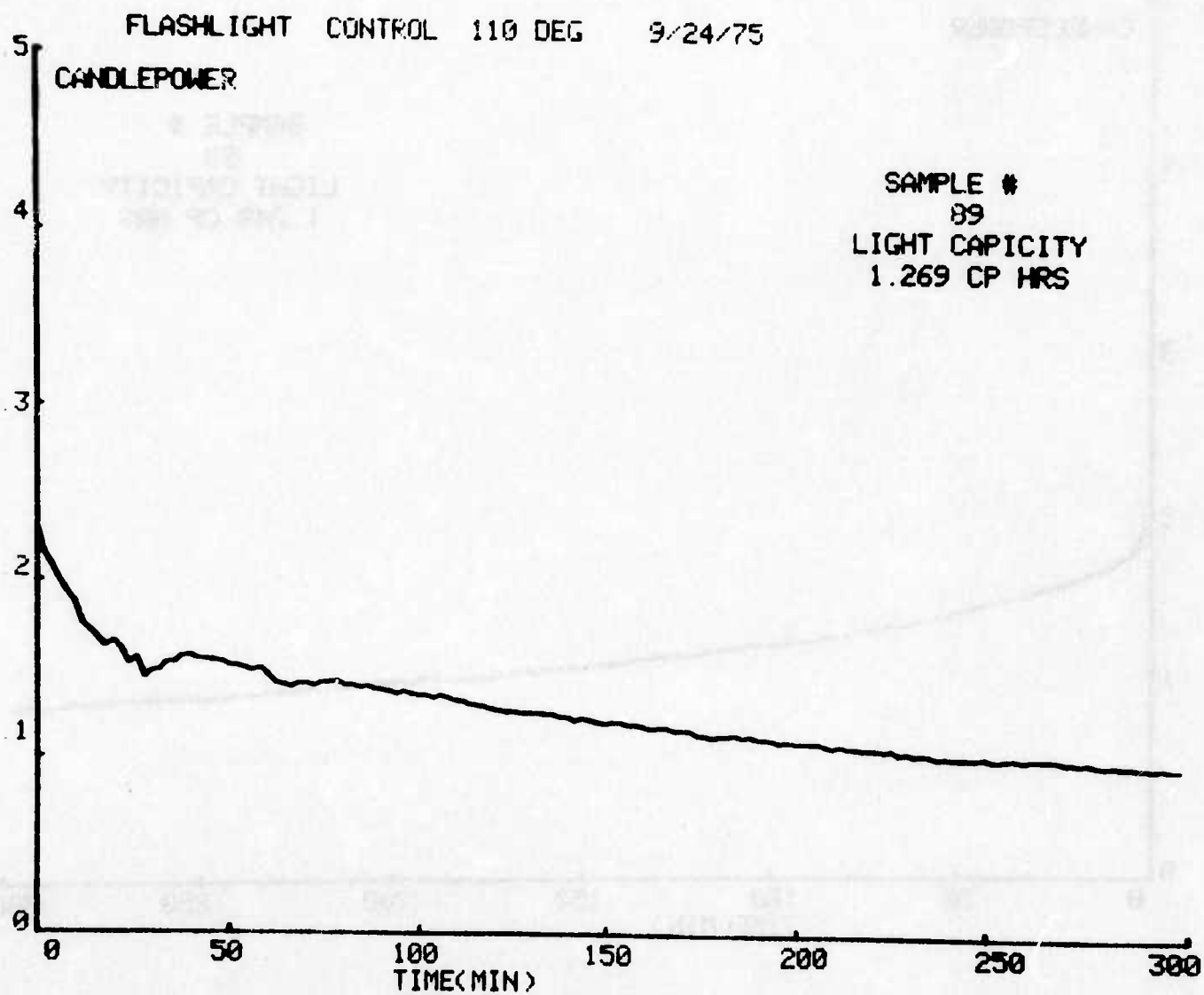


FLASHLIGHT CONTROL AMBIENT 9/22/75

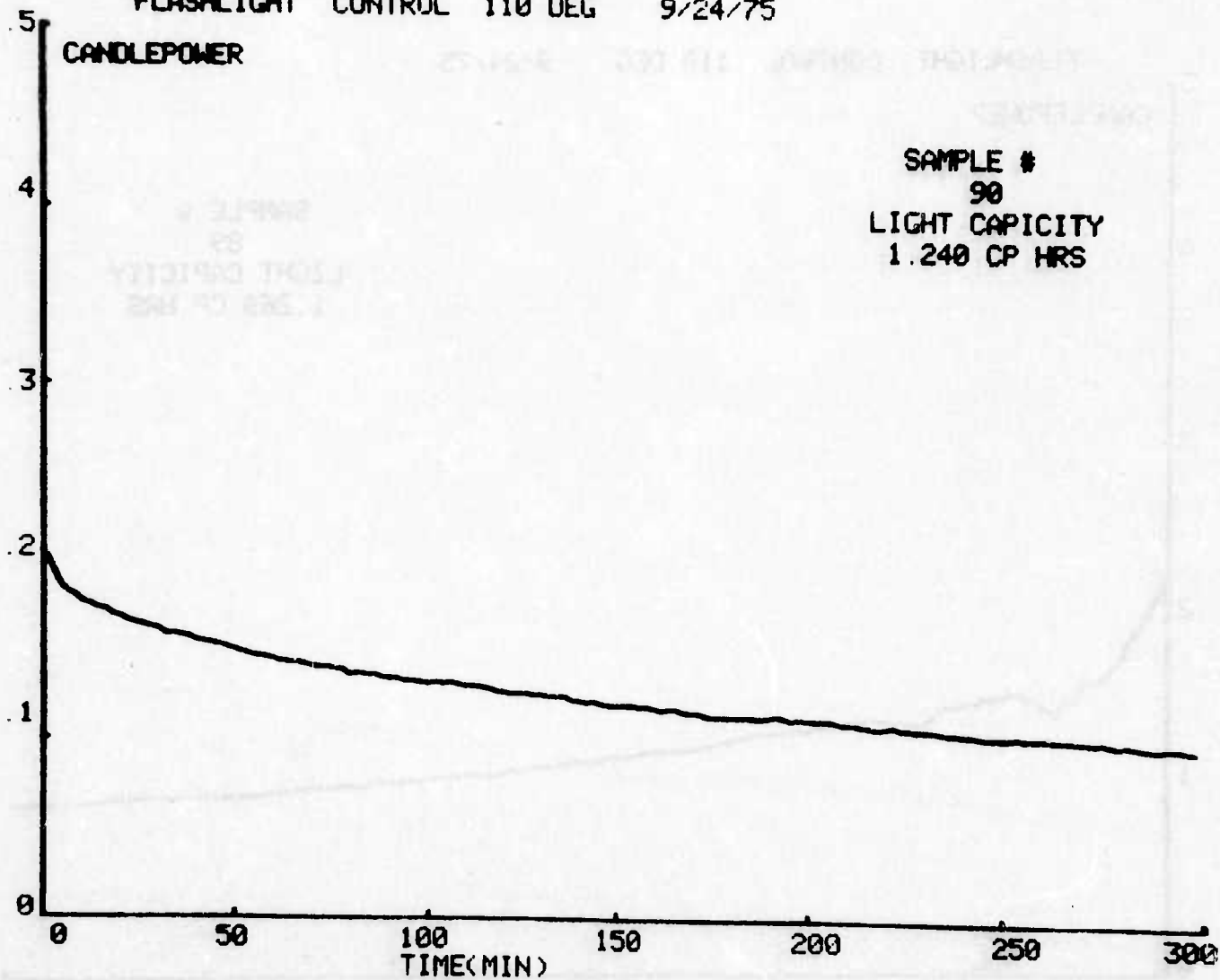


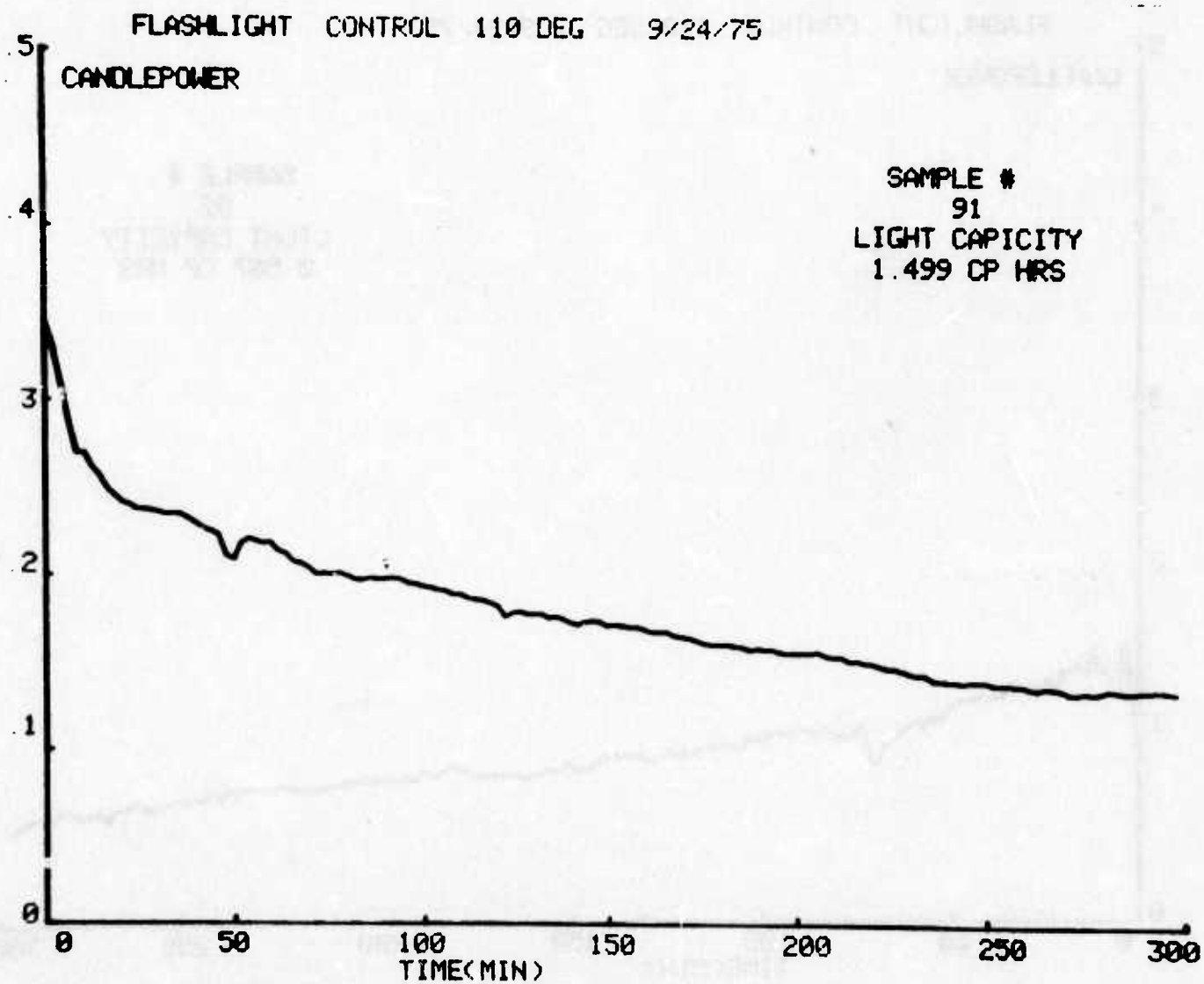
FLASHLIGHT CONTROL AMBIENT 9/22/75





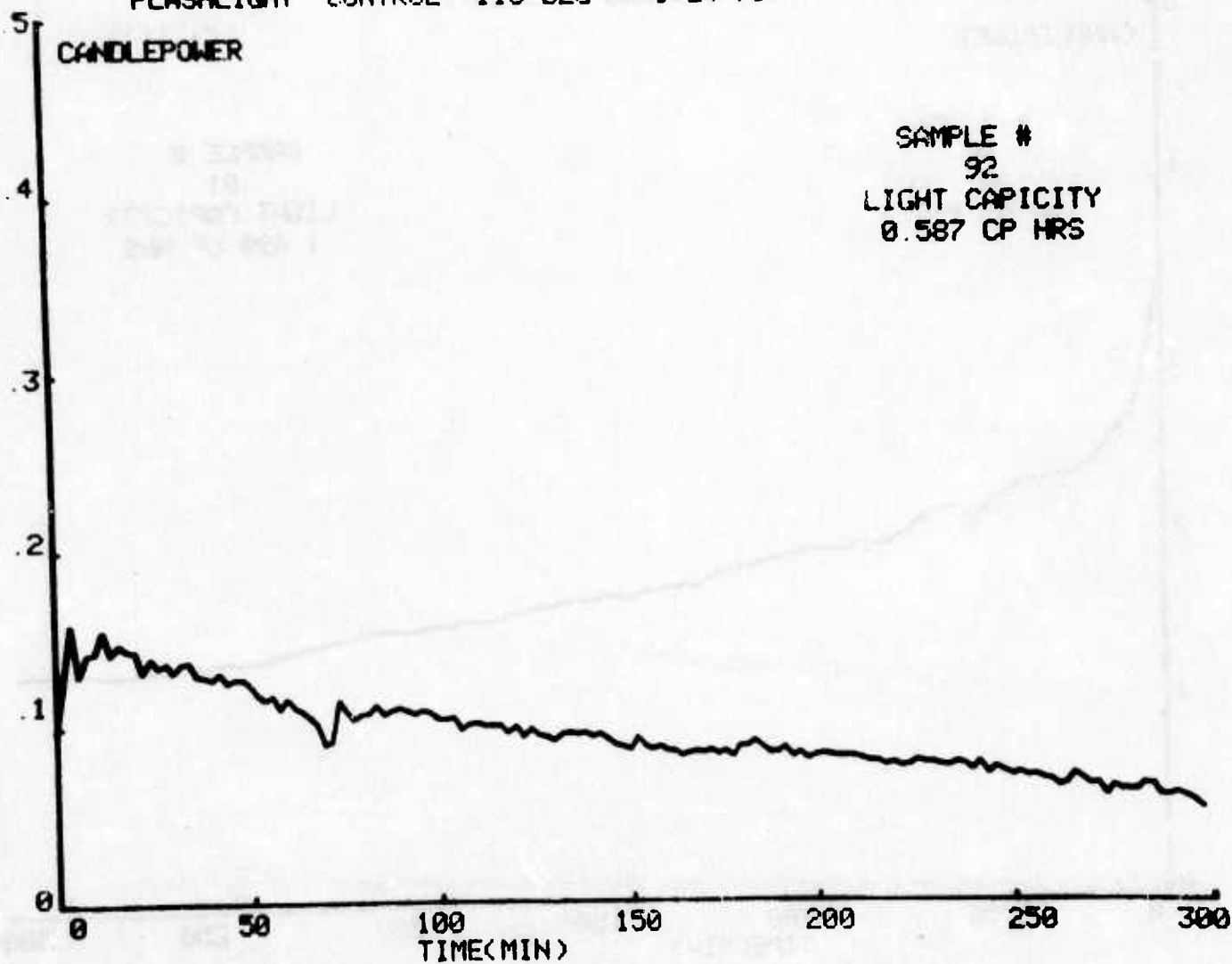
FLASHLIGHT CONTROL 110 DEG 9/24/75



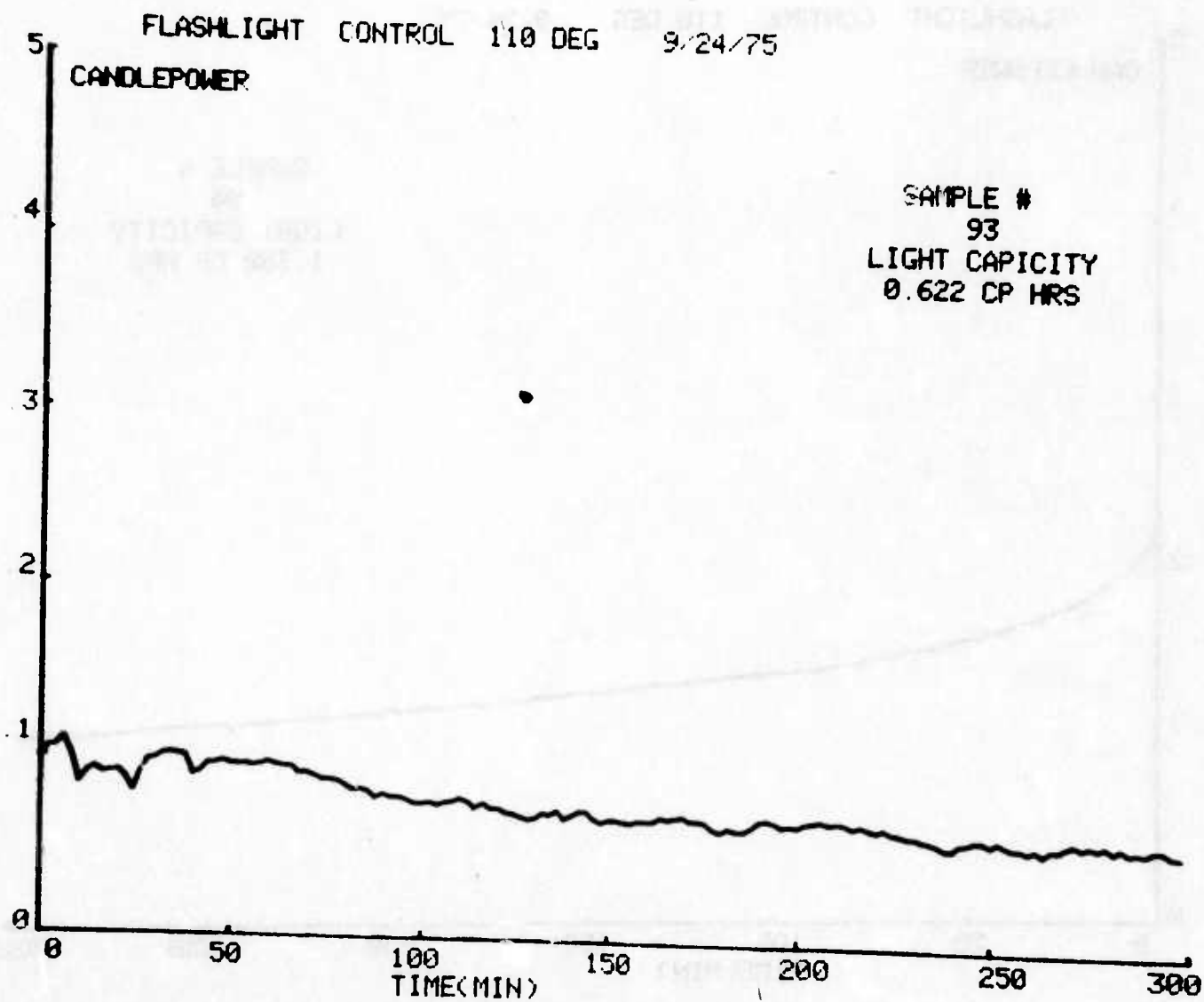




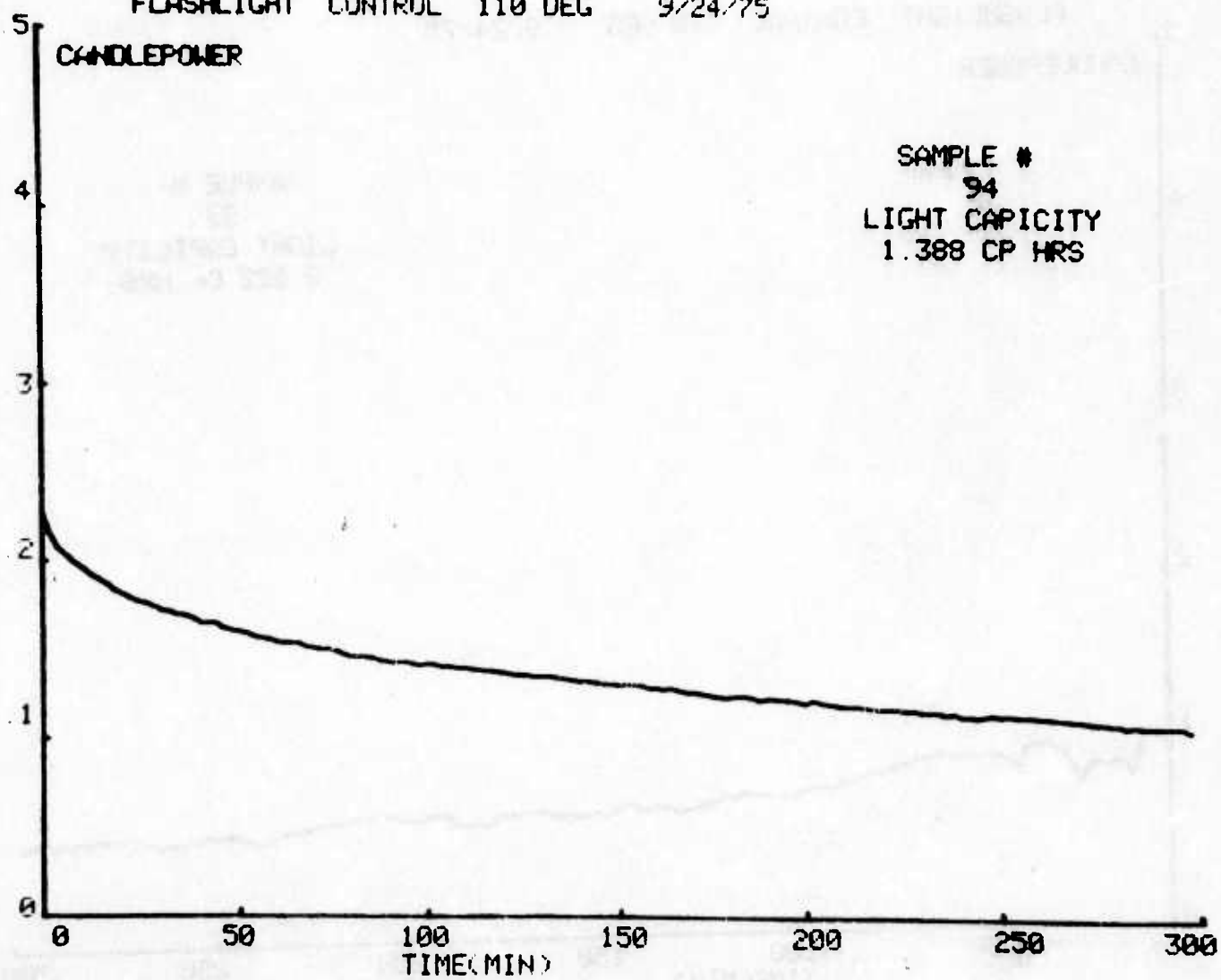
FLASHLIGHT CONTROL 110 DEG 9/24/75

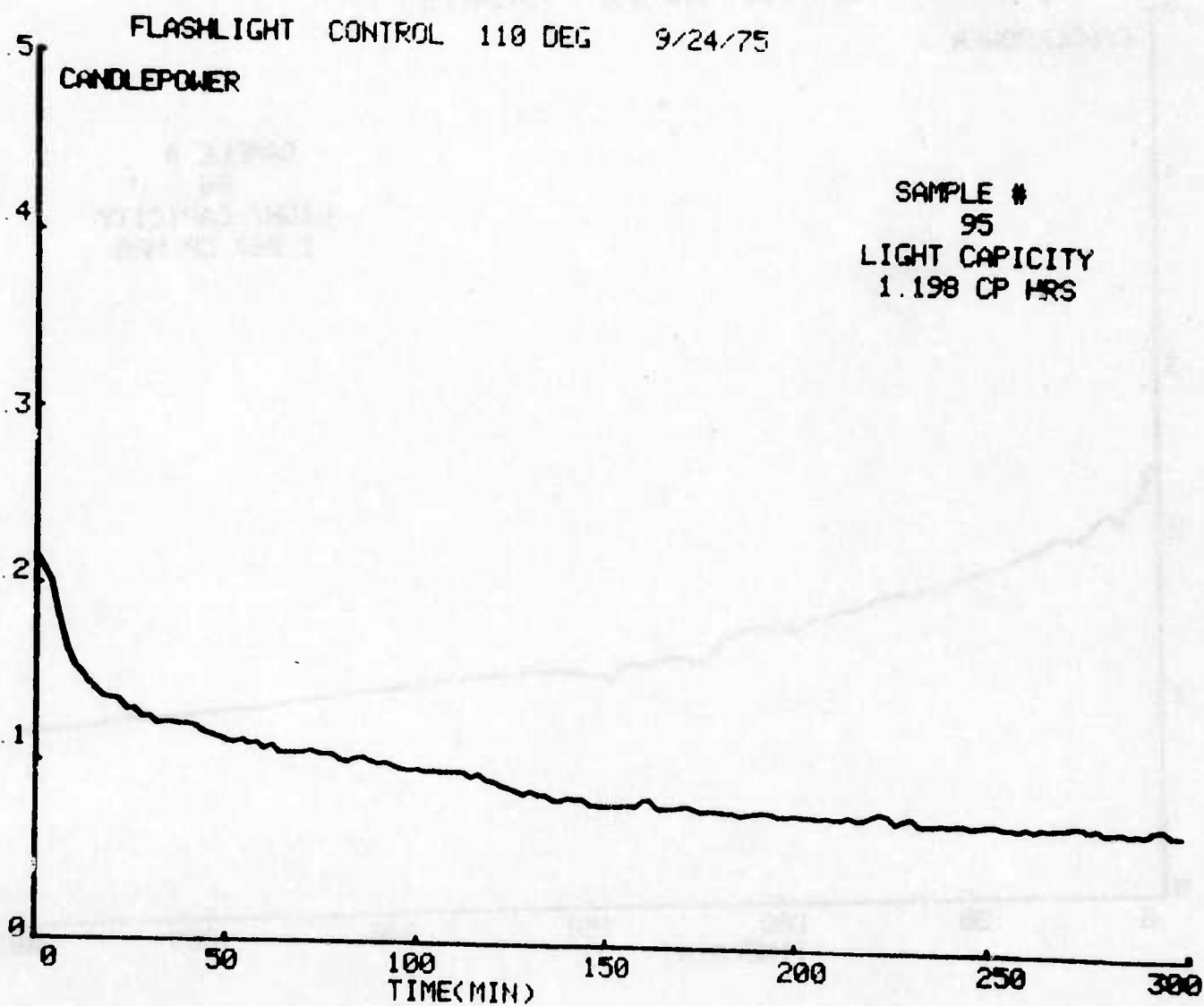




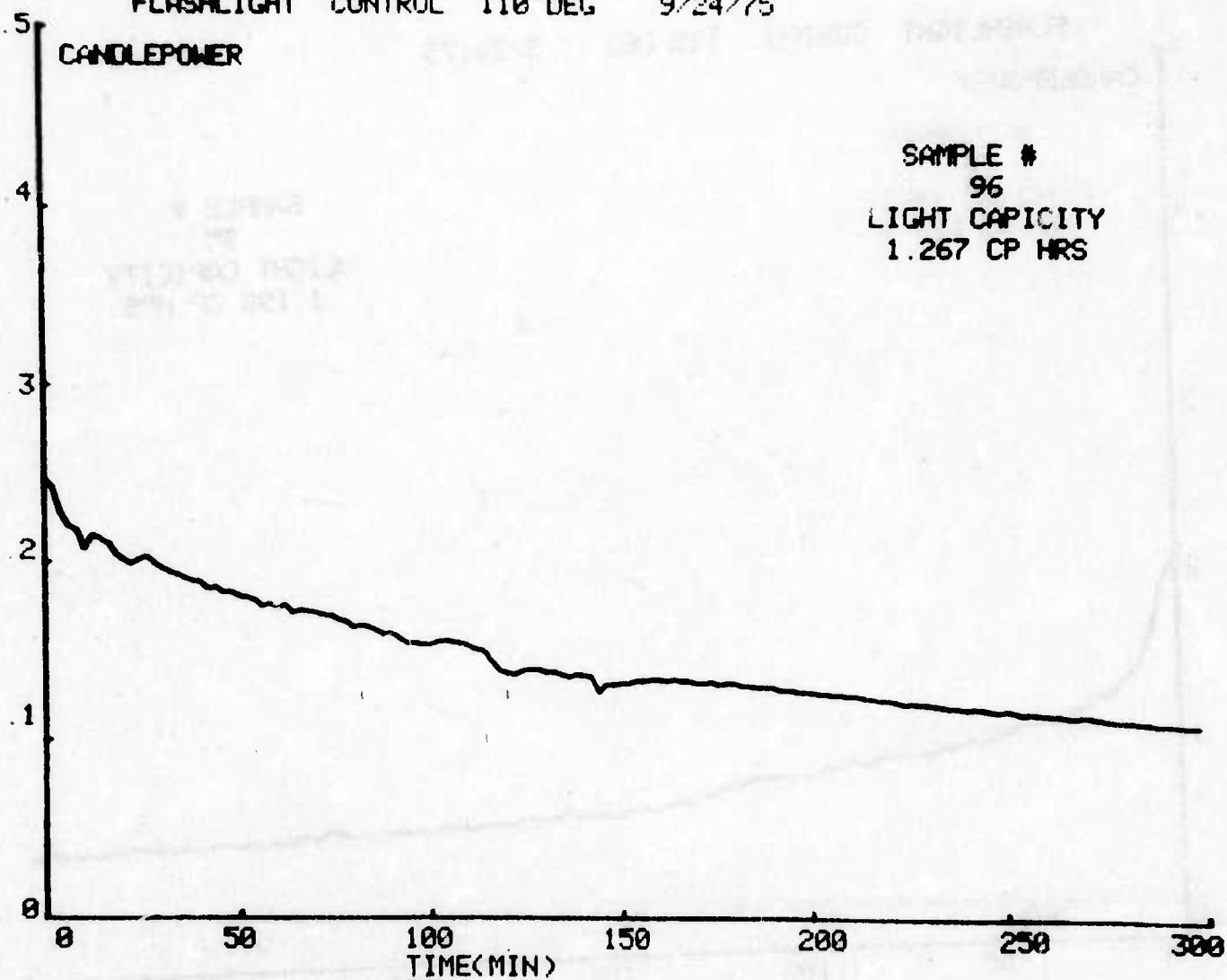


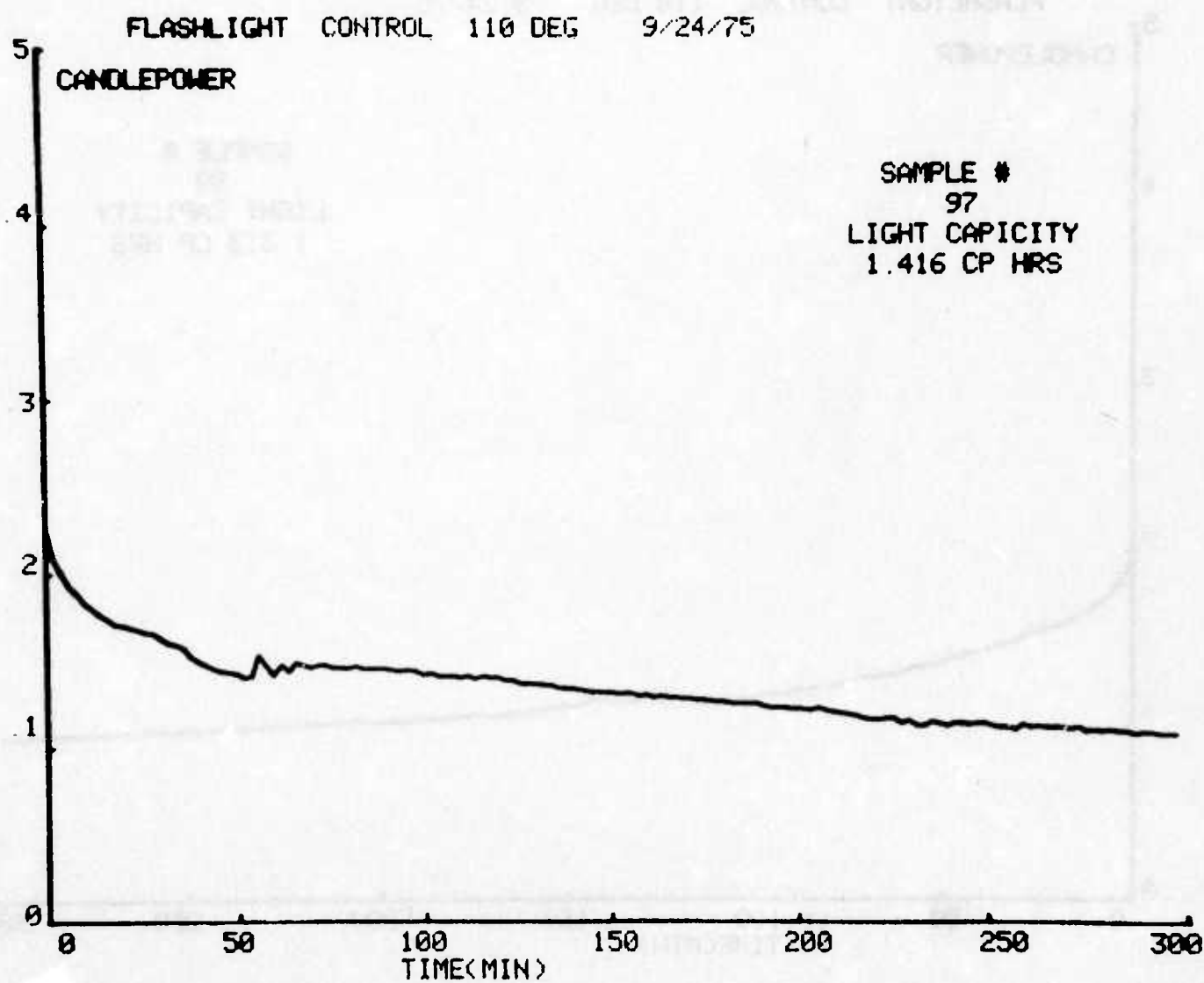
FLASHLIGHT CONTROL 110 DEG 9/24/75



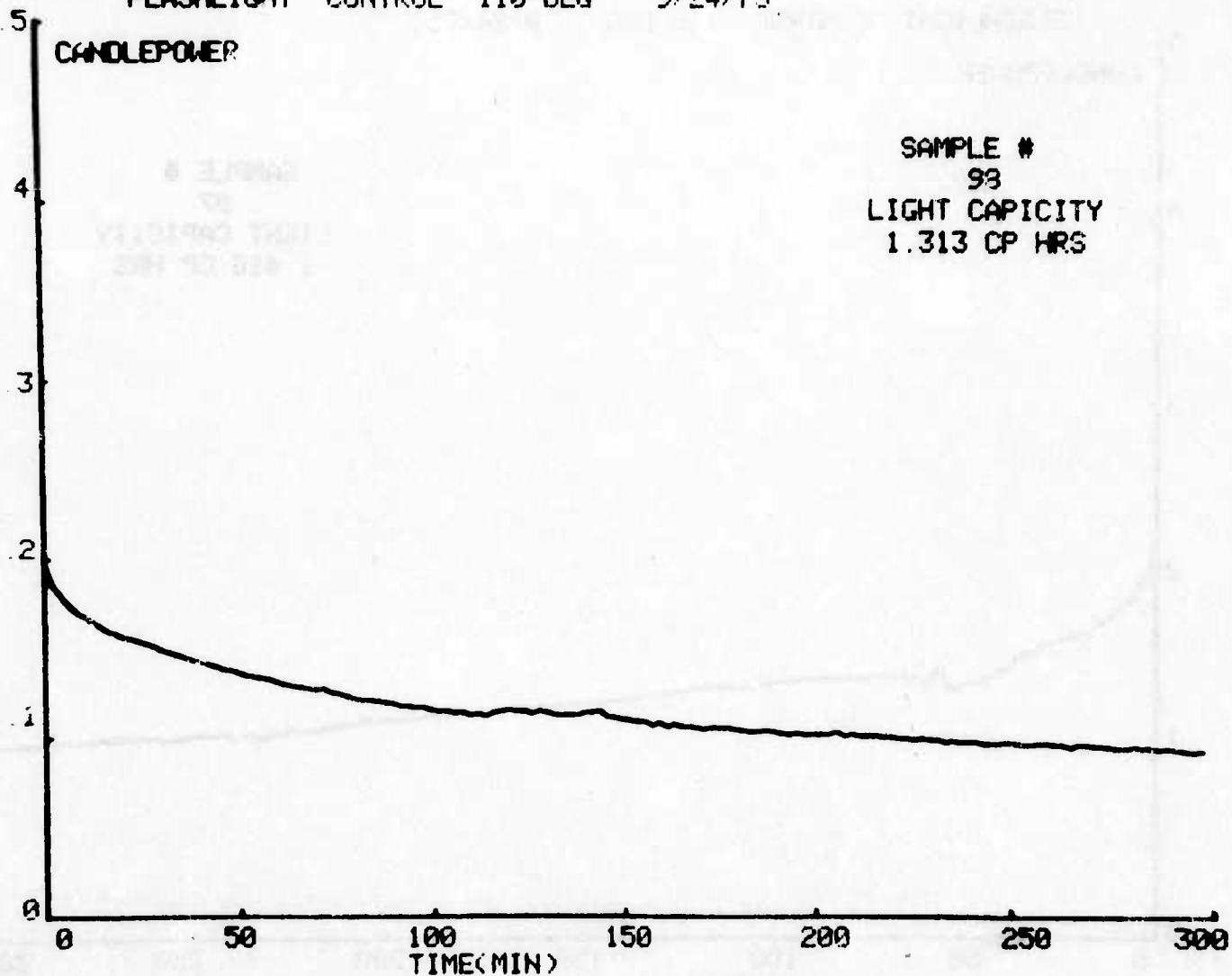


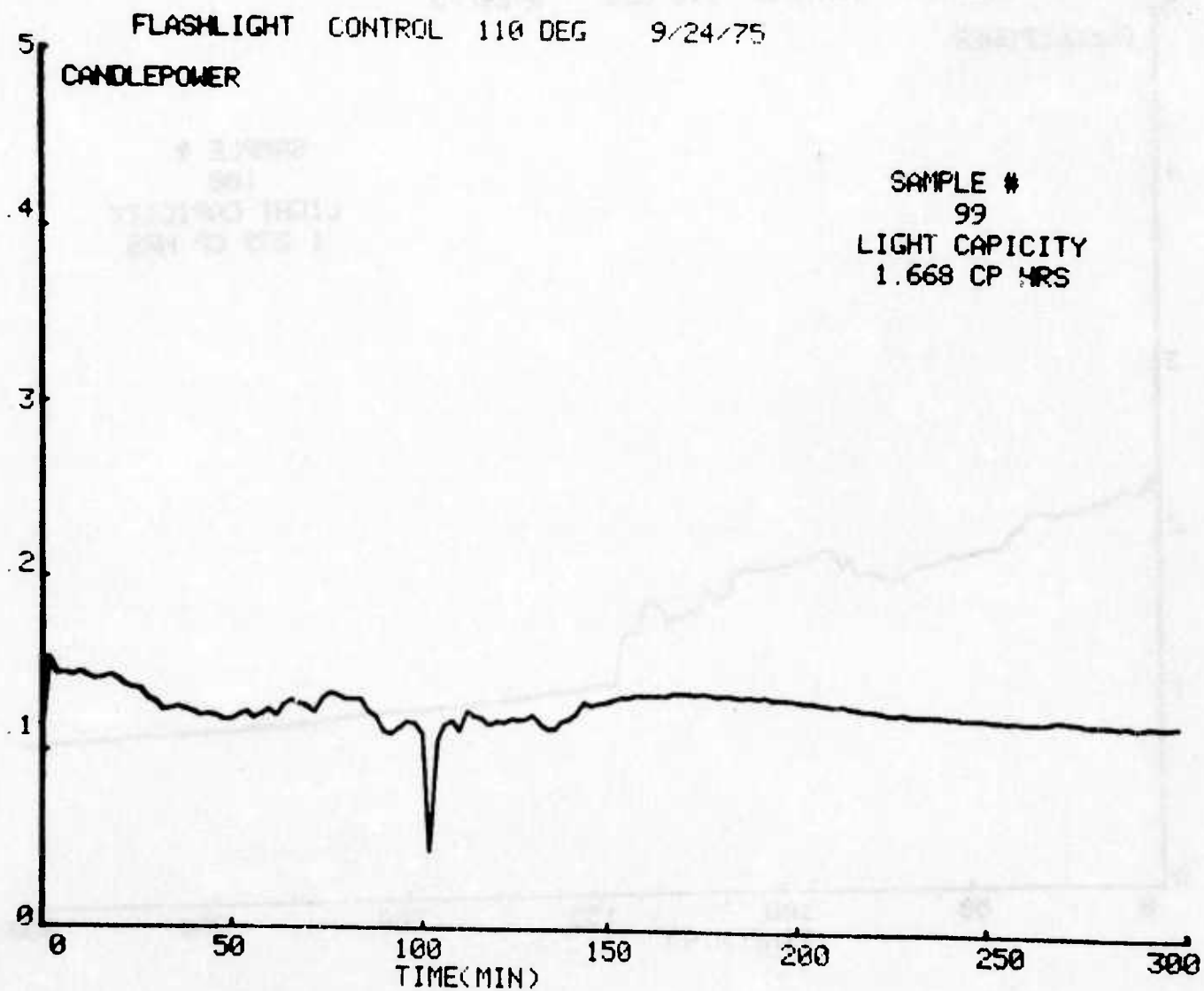
FLASHLIGHT CONTROL 110 DEG 9/24/75





FLASHLIGHT CONTROL 110 DEG 9/24/75



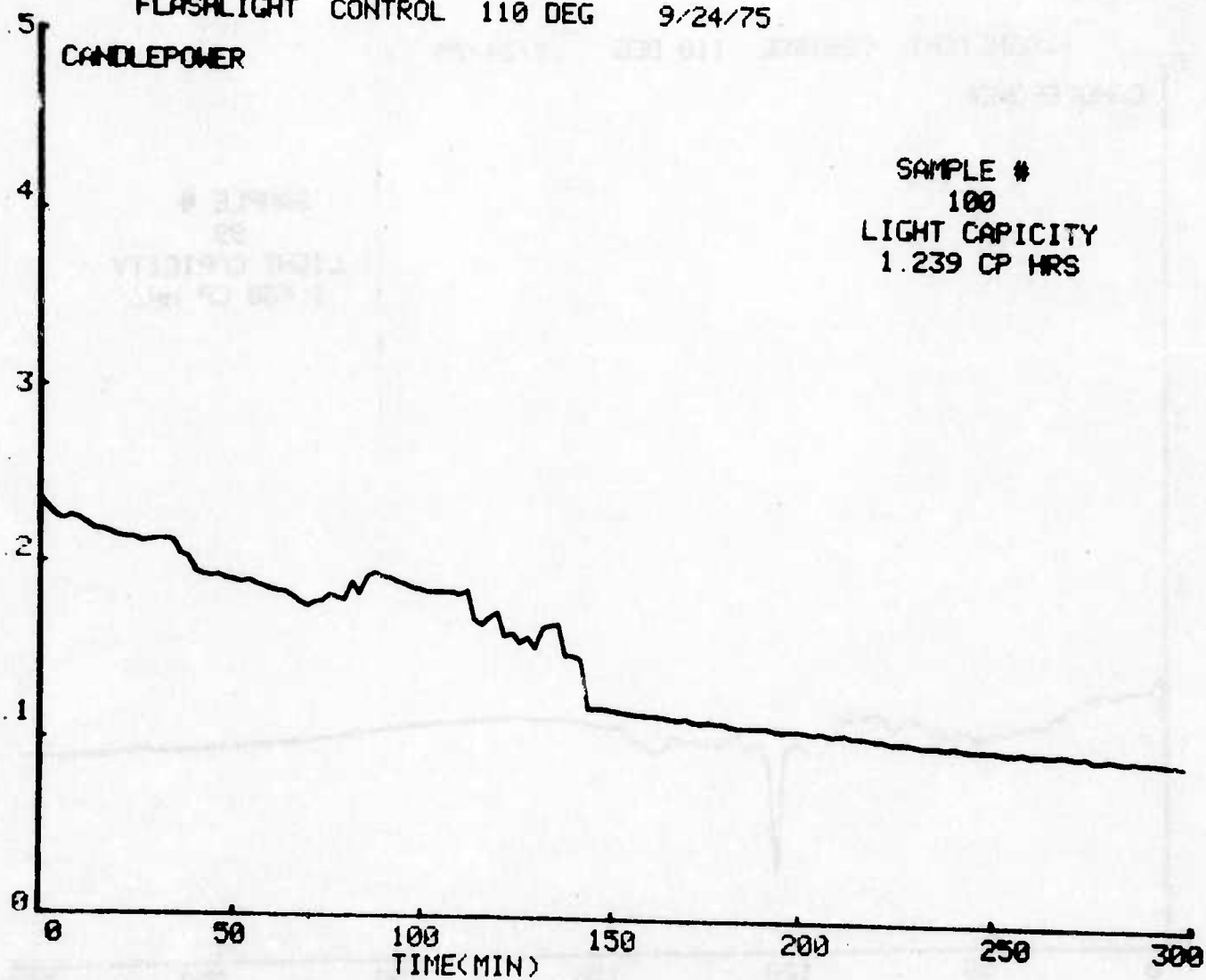




FLASHLIGHT CONTROL 110 DEG 9/24/75

CANDLEPOWER

SAMPLE #  
100  
LIGHT CAPACITY  
1.239 CP HRS





SAMPLE#	INTENSITY (FL/CH) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
1	22.2	16.5	13.9	10.9	8.3	6.4	4.9	3.7	2.9	1.9	1.6	0.9
2	18.7	14.0	12.2	9.4	6.9	5.3	4.0	2.9	2.2	1.5	1.2	0.8
3	19.4	14.7	12.9	9.9	7.4	5.8	4.4	3.3	2.5	1.8	1.4	1.0
4	18.1	14.4	13.2	10.2	7.7	6.0	4.6	3.4	2.7	1.9	1.6	1.0
5	19.9	14.3	12.6	9.7	7.3	5.5	4.2	3.3	2.5	1.7	1.4	0.9
6	21.0	14.9	13.2	10.6	7.8	6.2	4.5	3.5	2.6	2.0	1.5	1.0
7	8.8	13.0	12.6	9.2	6.9	5.0	4.2	3.3	2.5	1.9	1.4	1.1
8	17.0	13.6	12.6	9.8	7.3	5.7	4.3	3.3	2.5	1.8	1.4	1.1
9	6.4	12.1	12.8	10.7	8.7	6.9	5.2	4.1	3.2	2.5	2.0	1.4
10	14.3	13.1	13.4	10.8	8.1	6.4	4.8	3.8	2.9	2.2	1.8	1.3
11	19.6	14.5	12.8	9.8	7.5	6.0	4.4	3.4	2.7	1.9	1.5	0.9
12	1.0	4.4	9.4	9.4	8.3	7.4	5.9	4.6	3.7	2.7	2.3	1.7
16	19.2	14.7	12.4	9.8	7.3	6.0	4.3	3.3	2.5	1.9	1.5	1.0
17	19.6	14.1	12.1	9.6	7.3	5.8	4.4	3.4	2.6	1.8	1.5	1.0
18	17.5	13.9	11.8	9.2	6.9	5.0	4.3	3.2	2.5	1.8	1.4	0.9
19	3.9	10.2	12.0	10.4	8.1	6.6	5.0	3.9	3.1	2.2	1.6	1.1
20	2.8	9.4	11.8	10.6	8.3	6.8	5.2	4.0	3.3	2.5	2.0	1.4
21	3.0	8.8	12.0	11.0	8.8	7.2	5.5	4.3	3.4	2.6	2.1	1.5
22	14.5	14.0	13.0	10.5	7.7	6.3	4.8	3.0	2.8	2.0	1.6	1.0
23	8.2	12.7	12.3	10.3	8.0	6.3	4.7	3.6	2.8	2.1	1.7	1.1
24	17.0	14.0	12.8	9.9	7.6	6.3	4.7	3.6	2.9	2.1	1.6	1.0
25	0.4	1.5	3.8	5.7	6.1	5.8	5.2	4.4	4.0	3.3	2.9	2.2
26	0.6	1.7	4.3	6.4	6.6	6.4	5.5	4.8	4.4	3.6	3.3	2.3
27	0.6	1.7	3.9	6.0	6.4	6.1	5.4	4.7	4.4	3.7	3.3	2.6

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY	EST TIME	PREDICTION EQUATION	
	AREA	AREA	(LM HRS/L)	OUT (HRS)	A	+ B * X
1	1958.4	23.6	324.646	5.8	6.937	-0.020016
2	1654.5	17.0	273.791	5.7	5.564	-0.016184
3	1784.9	22.9	296.121	5.8	6.201	-0.017778
4	1821.4	27.6	302.869	5.9	6.397	-0.018110
5	1745.1	22.8	289.586	5.8	6.079	-0.017409
6	1872.8	24.4	310.764	5.8	6.427	-0.018388
7	1626.9	30.9	271.350	6.0	6.014	-0.016766
8	1731.9	26.4	288.012	5.9	6.037	-0.017074
9	1845.4	43.7	309.447	6.1	7.484	-0.020609
10	1681.2	35.5	313.957	6.0	6.913	-0.019274
11	1787.8	18.6	295.888	5.7	6.654	-0.019473
12	1661.6	55.6	281.275	6.1	8.339	-0.022637
16	1763.3	26.6	293.190	5.9	6.210	-0.017589
17	1735.9	28.0	288.937	5.9	6.219	-0.017539
18	1683.9	25.8	280.045	5.9	5.877	-0.016616
19	1732.2	39.9	290.268	6.0	7.181	-0.019873
20	1759.0	48.1	296.008	6.1	7.474	-0.020380
21	1822.6	49.5	306.641	6.1	7.850	-0.021452
22	1783.7	27.3	296.655	5.9	6.741	-0.019183
23	1744.0	32.5	290.993	5.9	6.821	-0.019146
24	1773.6	30.5	295.517	5.9	6.785	-0.019141
25	1277.3	161.0	235.594	7.2	7.593	-0.017512
26	1407.2	184.1	260.644	7.3	8.263	-0.018883
27	1382.1	221.8	262.727	7.6	8.017	-0.017541

COMMERCIAL 14-DAY T&H 9/15/75

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
1	4640.	4339.	3932.
2	4343.	4108.	3686.
3	4436.	4206.	3780.
4	4402.	4251.	3818.
5	4390.	4164.	3748.
6	4453.	4251.	3881.
7	4219.	4164.	3669.
8	4295.	4180.	3753.
9	4099.	4187.	3981.
10	4237.	4518.	3917.
11	4415.	4187.	3780.
12	2683.	3686.	3686.
16	4436.	4137.	3753.
17	4360.	4099.	3726.
18	4330.	4061.	3664.
19	3818.	4080.	3850.
20	3698.	4056.	3886.
21	3600.	4080.	3947.
22	4351.	4215.	3860.
23	4174.	4127.	3839.
24	4351.	4192.	3780.
25	1640.	2502.	2985.
26	1757.	2637.	3134.
27	1741.	2542.	3053.

COMMERCIAL SALT SPRAY 9/15/75

SAMPLE #	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
41	17.1	17.8	15.6	11.9	9.2	6.9	5.3	3.6	2.9	2.1	1.2	1.1
42	14.5	15.9	15.0	11.7	9.0	6.8	5.3	3.8	2.9	2.2	1.5	1.2
43	21.4	19.2	16.1	12.1	9.4	7.0	5.5	4.0	3.0	2.1	1.3	1.1
44	16.6	16.7	14.9	11.1	8.5	6.3	4.8	3.5	2.5	1.9	1.1	1.0
45	17.2	17.1	15.2	11.5	8.9	6.6	5.0	3.6	2.6	1.9	1.2	0.9
46	16.0	17.9	16.0	12.2	9.4	7.0	5.4	3.9	2.9	2.2	1.4	1.1
47	22.6	18.4	15.7	11.7	9.0	6.7	5.2	3.8	2.8	2.1	1.3	0.9
48	20.5	18.7	16.7	12.4	9.4	7.2	5.6	4.2	3.1	2.4	1.5	1.3
49	19.3	19.4	16.4	12.5	9.7	7.3	5.8	4.1	3.0	2.2	1.4	1.1
50	19.0	18.3	16.1	12.1	9.5	7.0	5.5	3.9	3.0	2.1	1.4	1.1
51	20.9	18.5	15.5	12.0	9.2	6.8	5.4	3.8	2.8	2.0	1.3	1.0
52	22.6	19.1	16.2	12.0	9.2	7.0	5.5	3.9	2.9	2.1	1.3	1.0
53	20.6	18.1	15.6	12.6	9.5	7.0	5.5	4.0	2.9	2.0	1.2	1.0
54	17.1	16.7	14.5	11.2	8.8	6.6	5.3	3.8	2.8	2.2	1.4	1.1
55	23.4	19.2	15.1	11.7	9.1	7.0	5.5	4.1	3.0	2.2	1.5	1.1
56	19.1	17.2	14.5	11.2	8.7	6.7	5.2	3.7	2.6	2.1	1.3	1.1
57	19.7	17.8	14.8	11.3	8.7	6.7	5.2	3.6	2.7	1.9	1.2	0.9
58	22.3	18.1	14.2	11.2	8.8	6.8	5.4	4.0	2.9	2.2	1.4	1.1
59	20.9	18.3	15.4	11.7	9.0	6.9	5.4	3.8	2.8	2.0	1.2	0.9
60	20.0	17.9	15.0	11.6	9.0	6.9	5.4	3.9	3.0	2.3	1.5	1.0
61	22.6	18.1	15.3	11.6	9.0	6.9	5.5	3.9	2.9	2.3	1.5	1.2
62	19.6	17.3	14.9	11.1	8.7	6.6	5.3	3.8	2.9	2.2	1.4	1.1
63	20.4	18.0	14.6	10.9	8.8	6.5	5.2	3.7	2.7	2.1	1.3	1.0
64	22.0	18.8	15.2	11.8	9.2	7.0	5.5	3.9	3.0	2.2	1.5	1.0

SAMPLE #	MEASURED	PREDICTED	LIGHT CAPACITY	EST TIME	PREDICTION EQUATION	
	AREA	AREA	(LM HRS/L)	OUT (HRS)	A	+ B*X
41	2096.8	17.6	346.333	5.6	7.359	-0.021758
42	2045.7	28.0	339.673	5.8	7.116	-0.020300
43	2185.6	17.8	360.916	5.6	7.737	-0.022928
44	1965.4	16.7	324.676	5.7	6.627	-0.019525
45	2023.7	14.7	333.894	5.6	6.922	-0.020616
46	2155.0	21.7	356.545	5.7	7.516	-0.021949
47	2111.9	17.3	348.753	5.6	7.448	-0.022063
48	2236.1	28.9	371.011	5.8	7.794	-0.022340
49	2228.1	18.5	367.999	5.6	7.892	-0.023363
50	2164.3	18.7	357.570	5.6	7.536	-0.022231
51	2111.6	14.5	348.268	5.6	7.406	-0.022162
52	2164.4	16.2	357.178	5.6	7.667	-0.022906
53	2142.3	17.1	353.725	5.6	7.560	-0.022426
54	2011.2	23.8	333.334	5.8	7.173	-0.020735
55	2148.9	23.1	355.769	5.7	7.653	-0.022279
56	2023.9	19.2	334.649	5.7	7.264	-0.021341
57	2017.9	13.6	332.748	5.6	7.220	-0.021656
58	2071.3	24.0	343.209	5.7	7.611	-0.022083
59	2098.7	14.6	346.160	5.6	7.397	-0.022125
60	2094.7	21.6	346.651	5.7	7.524	-0.021977
61	2125.2	25.4	352.266	5.8	7.490	-0.021619
62	2031.9	23.2	336.633	5.7	7.277	-0.021097
63	2003.0	18.4	331.109	5.7	7.848	-0.020719
64	2137.1	19.0	353.171	5.6	7.708	-0.022743

COMMERCIAL SALT SPRAY 9/15/75

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
41	4782.	4546.	4075.
42	4570.	4469.	4046.
43	4931.	4597.	4104.
44	4663.	4453.	3962.
45	4704.	4489.	4017.
46	4797.	4581.	4108.
47	4847.	4558.	4036.
48	4876.	4670.	4137.
49	4952.	4636.	4155.
50	4836.	4601.	4104.
51	4854.	4534.	4080.
52	4918.	4613.	4085.
53	4811.	4538.	4164.
54	4670.	4407.	3972.
55	4928.	4485.	4036.
56	4719.	4411.	3972.
57	4782.	4423.	3987.
58	4815.	4369.	3977.
59	4836.	4514.	4036.
60	4793.	4465.	4032.
61	4815.	4502.	4032.
62	4727.	4461.	3952.
63	4804.	4423.	3927.
64	4893.	4494.	4061.



COMMERCIAL CONTROL 9/16/75

SAMPLE #	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
65	18.8	18.6	17.0	12.5	9.1	6.3	4.4	3.4	2.6	1.9	1.6	1.2
66	14.6	17.1	15.7	12.1	8.7	6.0	4.2	3.3	2.6	1.8	1.7	1.3
67	18.6	18.9	16.8	12.3	8.9	6.1	4.4	3.2	2.5	1.7	1.5	1.1
68	15.1	17.5	17.6	12.4	8.9	6.0	4.4	3.1	2.6	1.9	1.7	1.3
69	21.0	18.8	17.3	12.4	9.1	6.5	4.7	3.6	2.8	1.9	1.7	1.3
70	18.1	18.9	17.8	13.1	9.4	6.5	4.7	3.6	2.8	2.0	1.7	1.4
71	20.2	19.2	16.8	12.3	9.0	6.4	4.4	3.4	2.5	1.8	1.6	1.2
72	17.6	18.8	18.0	13.2	9.4	6.6	4.6	3.6	2.8	2.0	1.7	1.4
73	19.4	19.2	17.2	12.4	8.9	6.3	4.1	3.2	2.4	1.7	1.4	1.1
74	16.8	18.1	17.6	12.7	9.0	6.3	4.3	3.4	2.5	1.9	1.6	1.3
75	19.9	19.5	17.7	12.8	9.4	6.6	4.5	3.5	2.6	1.8	1.5	1.3
76	17.3	17.8	17.0	12.3	8.7	6.1	4.2	3.4	2.6	2.0	1.6	1.4
77	20.2	20.9	17.4	12.4	9.0	6.3	4.4	3.4	2.5	1.8	1.5	1.3
78	24.9	20.1	16.6	11.8	8.9	6.2	4.4	3.4	2.6	2.0	1.6	1.3
79	25.9	20.7	16.7	12.1	8.7	6.1	4.3	3.2	2.4	1.8	1.6	1.2
80	25.5	18.9	15.6	11.1	8.2	5.8	4.3	3.4	2.6	1.9	1.7	1.3
81	25.6	19.0	15.7	11.2	8.2	5.8	4.2	3.3	2.5	1.7	1.5	1.3
82	25.3	19.8	16.8	12.1	8.8	6.4	4.5	3.5	2.5	1.8	1.5	1.2
83	25.5	20.4	16.9	12.0	8.7	6.1	4.4	3.3	2.5	1.8	1.4	1.1
84	27.6	21.7	18.2	13.0	9.3	6.6	4.7	3.5	2.7	1.9	1.6	1.2
85	25.1	19.2	15.6	10.9	7.8	5.6	4.1	3.2	2.4	1.7	1.4	1.2
86	25.3	21.1	17.6	12.8	9.1	6.2	4.4	3.4	2.6	1.8	1.4	1.1
87	25.7	20.5	17.0	12.5	8.9	6.2	4.3	3.3	2.5	1.7	1.4	1.1
88	26.5	21.0	17.3	12.5	8.9	6.2	4.4	3.4	2.6	1.8	1.5	1.2

SAMPLE #	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (LM HRS/L)	EST TIME OUT (HRS)	PREDICTION EQUATION	
					A	B * X
65	2089.8	39.0	348.699	6.2	5.616	-0.015195
66	2005.1	49.3	336.496	6.4	5.341	-0.013983
67	2126.3	34.3	342.432	6.1	5.415	-0.014793
68	2163.6	55.0	347.055	6.5	5.255	-0.013539
69	2137.4	48.2	357.994	6.3	5.787	-0.015340
70	2175.4	54.2	365.198	6.4	5.675	-0.014794
71	2077.4	38.5	346.580	6.2	5.509	-0.014896
72	2179.6	55.1	366.040	6.4	5.696	-0.014824
73	2050.8	34.3	343.175	6.1	5.259	-0.014319
74	2080.9	47.7	349.480	6.3	5.394	-0.014198
75	2120.0	38.4	359.888	6.1	5.714	-0.015513
76	2054.6	57.7	345.984	6.5	5.332	-0.013678
77	2152.1	39.1	358.924	6.2	5.513	-0.014879
78	2104.0	47.8	352.461	6.3	5.540	-0.014822
79	2086.8	41.2	348.582	6.2	5.237	-0.013974
80	1926.2	48.9	334.986	6.3	5.423	-0.014239
81	1988.4	41.9	332.571	6.2	5.325	-0.014208
82	2101.5	35.0	349.966	6.1	5.590	-0.015285
83	2073.3	35.9	345.432	6.1	5.392	-0.014655
84	2233.5	40.6	372.498	6.2	5.780	-0.015617
85	1946.3	42.5	325.754	6.3	5.187	-0.013538
86	2160.4	34.7	359.587	6.1	5.579	-0.015268
87	2113.8	32.3	351.533	6.0	5.545	-0.015275
88	2146.5	38.5	357.867	6.2	5.578	-0.015076

COMMERCIAL CONTROL 9/16/75

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
65	4672.	4693.	4155.
66	4708.	4667.	4104.
67	4697.	4682.	4132.
68	4749.	4760.	4146.
69	4693.	4727.	4137.
70	4904.	4786.	4228.
71	4931.	4682.	4123.
72	4886.	4808.	4242.
73	4924.	4723.	4141.
74	4811.	4764.	4178.
75	4956.	4771.	4192.
76	4786.	4697.	4123.
77	5093.	4742.	4141.
78	5020.	4651.	4061.
79	5073.	4670.	4094.
80	4897.	4542.	3952.
81	4907.	4558.	3972.
82	4993.	4674.	4104.
83	5047.	4689.	4089.
84	5173.	4826.	4224.
85	4924.	4542.	3927.
86	5112.	4760.	4192.
87	5053.	4697.	4155.
88	5109.	4731.	4155.

COMMERCIAL

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SAMPLE #	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
89	35.1	32.5	25.6	15.2	9.2	7.2	4.8	4.4	4.5	2.8	2.5	3.2
90	34.7	32.4	27.6	15.5	9.3	6.7	4.7	4.0	4.1	2.8	1.8	2.0
91	35.0	31.2	25.2	14.9	9.0	5.6	4.5	3.1	2.9	2.6	1.8	2.2
92	32.0	32.4	24.5	14.3	8.6	4.8	4.8	3.4	3.0	2.8	2.5	3.5
93	34.5	31.7	24.7	14.8	8.9	6.2	4.6	4.4	4.2	2.5	3.5	3.5
94	34.4	30.6	26.1	14.4	9.0	6.8	4.9	4.4	4.6	2.6	3.2	2.4
95	32.5	30.3	26.1	14.5	8.8	6.1	5.0	3.9	3.9	2.7	2.3	1.9
96	30.3	29.4	22.9	13.9	8.5	4.7	5.0	3.4	2.9	2.9	1.5	2.5
97	35.6	33.0	25.0	15.0	9.1	5.1	5.0	3.3	3.2	2.6	2.9	3.6
98	30.8	28.3	23.3	13.8	8.6	6.9	5.1	4.2	5.0	2.8	3.1	3.6
99	35.9	31.3	27.2	15.5	9.4	6.5	5.2	4.4	4.4	2.7	2.4	2.2
100	34.4	30.2	24.6	14.8	8.9	5.4	5.1	3.8	3.2	2.7	1.6	2.0
13	0.2	2.0	6.4	9.4	10.7	10.9	9.2	6.9	6.4	4.3	4.5	4.4
14	0.0	0.0	0.4	1.4	2.0	1.6	2.5	2.8	2.9	2.1	2.2	1.9
15	0.2	0.6	4.3	8.9	12.5	8.9	10.1	6.8	4.6	4.2	2.9	2.9
28	0.0	0.0	0.5	0.8	2.4	0.9	1.5	2.0	2.8	1.4	2.2	2.4
29	0.0	0.0	0.0	0.7	0.3	0.0	1.1	1.9	2.0	1.3	1.7	1.8
30	0.0	0.0	0.0	0.7	0.0	0.3	0.9	1.4	1.0	1.3	1.0	1.2

SAMPLE #	MEASURED	PREDICTED	LIGHT CAPACITY (LM HRS/L)	EST TIME OUT (HRS)	PREDICTION EQUATION	
	AREA	AREA			A	B * X
89	2743.7	146.7	481.636	7.2	7.112	-0.016486
90	2655.7	117.6	486.709	6.8	7.991	-0.019580
91	2710.3	107.5	462.530	6.8	7.087	-0.017311
92	2630.1	141.8	462.733	7.2	6.581	-0.015133
93	2673.8	132.6	459.689	7.2	6.304	-0.014561
94	2681.2	86.6	453.364	6.5	7.741	-0.019767
95	2684.4	80.0	452.809	6.4	7.957	-0.020608
96	2694.3	105.9	442.294	6.8	7.212	-0.017705
97	2730.3	189.5	478.258	7.9	5.678	-0.011921
98	2562.1	155.8	445.195	7.3	6.785	-0.015413
99	2810.9	60.5	470.334	6.2	8.649	-0.023380
100	2688.2	74.3	452.501	6.4	7.927	-0.020711
13	1985.8	144.7	348.974	6.7	10.752	-0.026743
14	503.2	66.2	93.261	6.6	5.483	-0.013856
15	2690.6	137.1	351.510	6.6	11.230	-0.028331
28	328.9	73.2	65.862	7.3	3.190	-0.007247
29	309.2	46.1	58.207	6.6	3.911	-0.009914
30	295.2	51.7	56.818	6.8	3.460	-0.008471

COMMERCIAL

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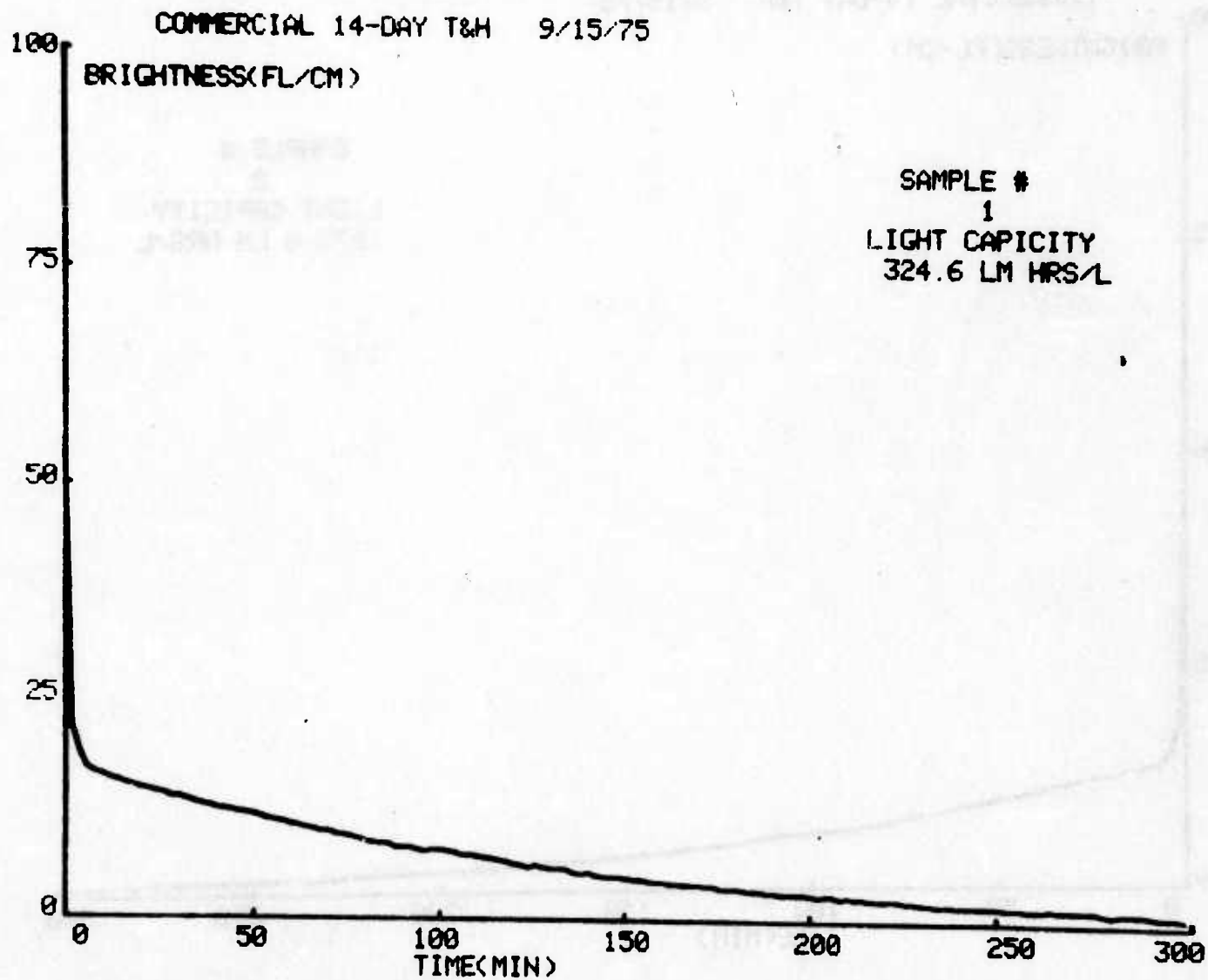
## ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

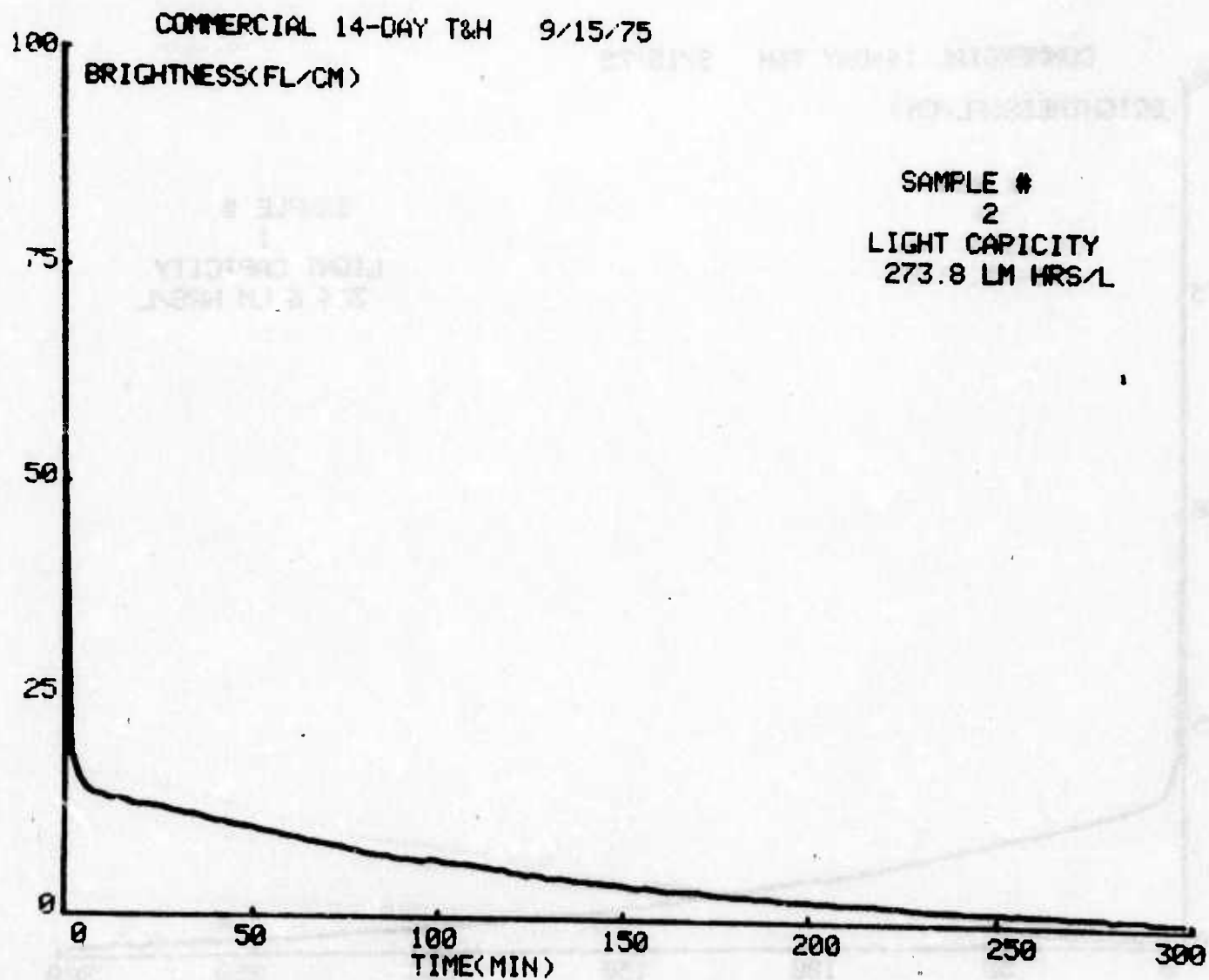
SAMPLE#	10 MIN	30 MIN	60 MIN
89	6026.	5508.	4489.
90	6024.	5673.	4534.
91	5939.	5474.	4461.
92	6024.	5419.	4381.
93	5976.	5434.	4444.
94	5893.	5553.	4402.
95	5873.	5553.	4415.
96	5809.	5282.	4339.
97	6062.	5457.	4469.
98	5726.	5312.	4317.
99	5947.	5636.	4534.
100	5865.	5422.	4448.

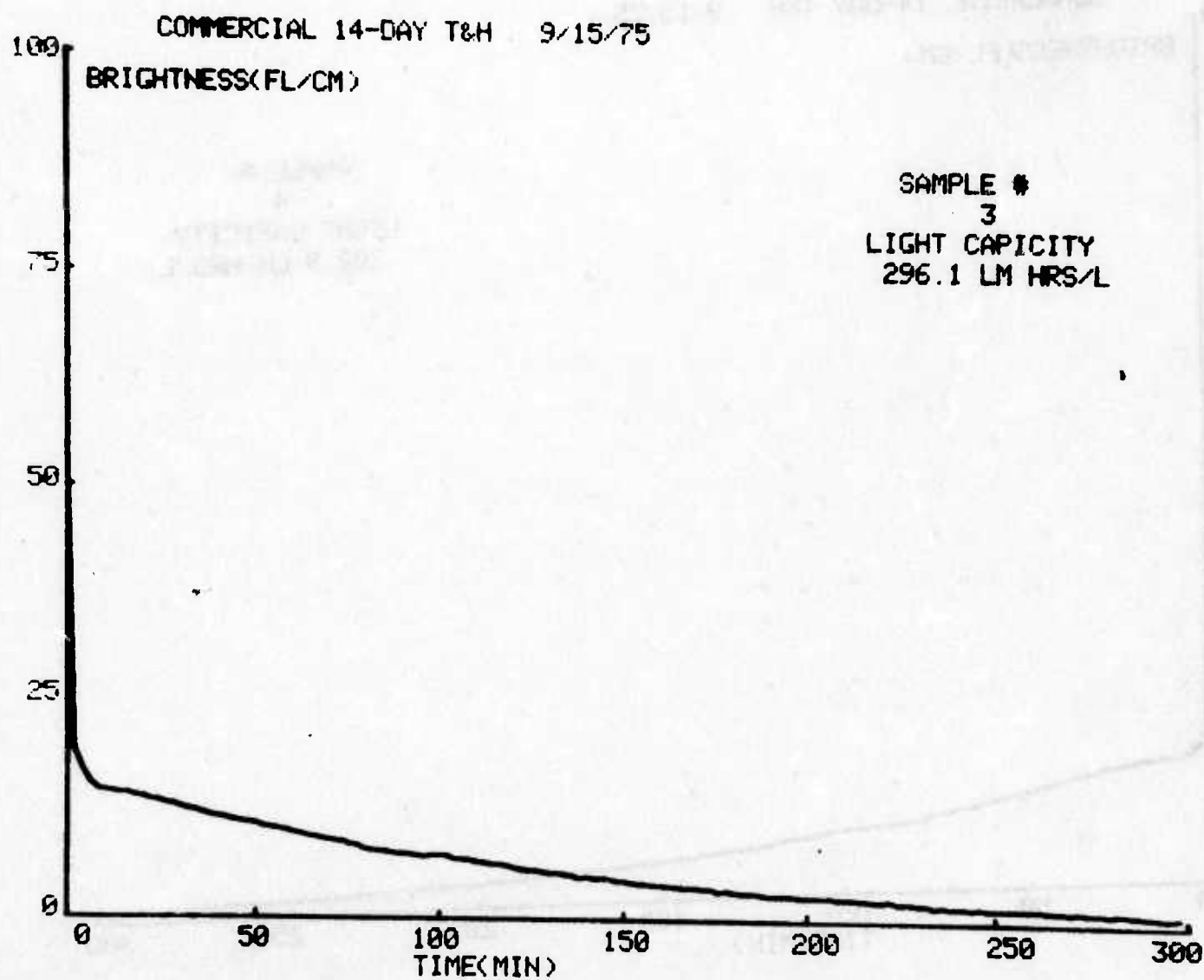
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15	1034.	2646.	3618.

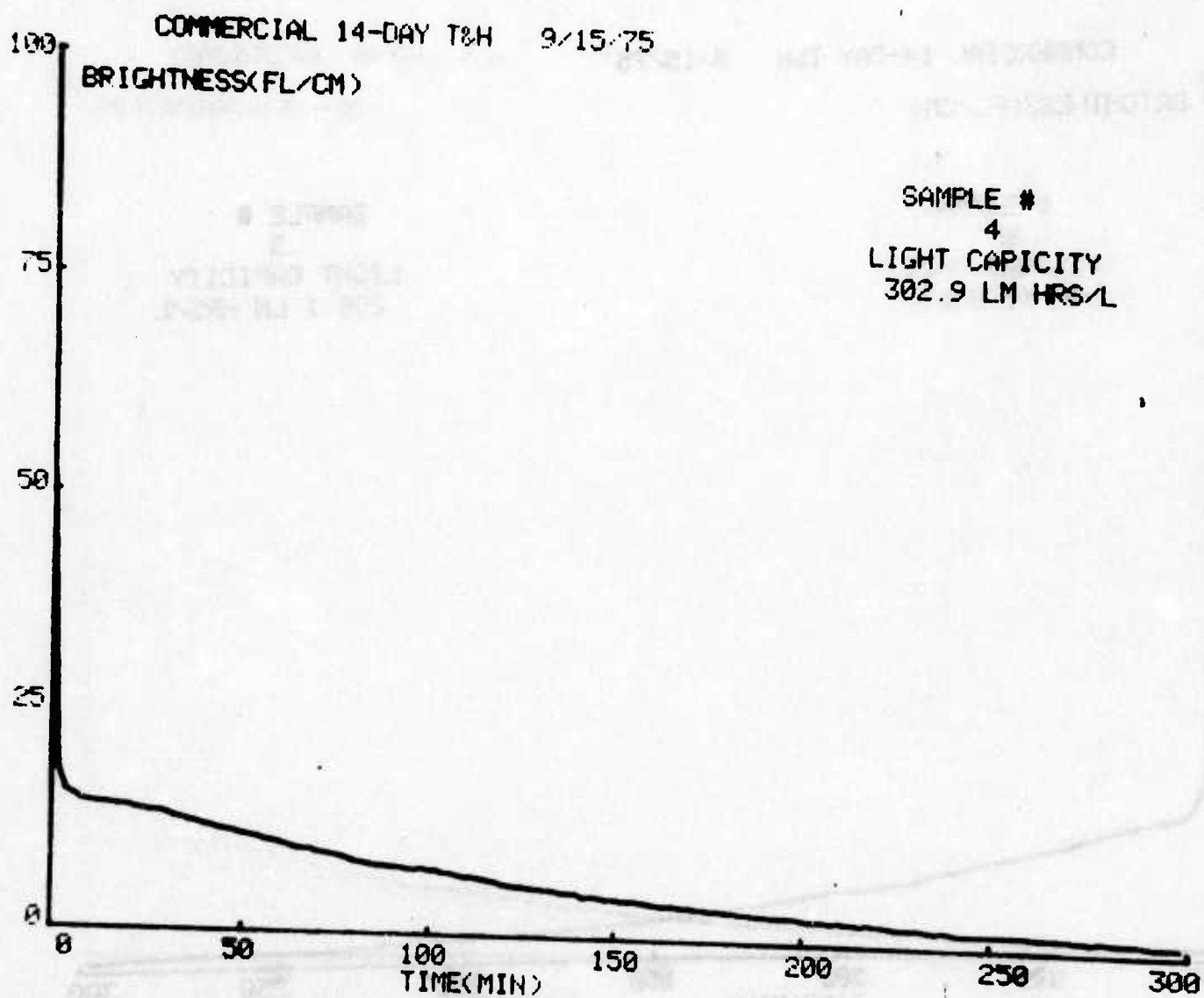
26	--159015	1003.	1227.
29	--159015	--159015	1148.
30	--159015	--159015	1175.

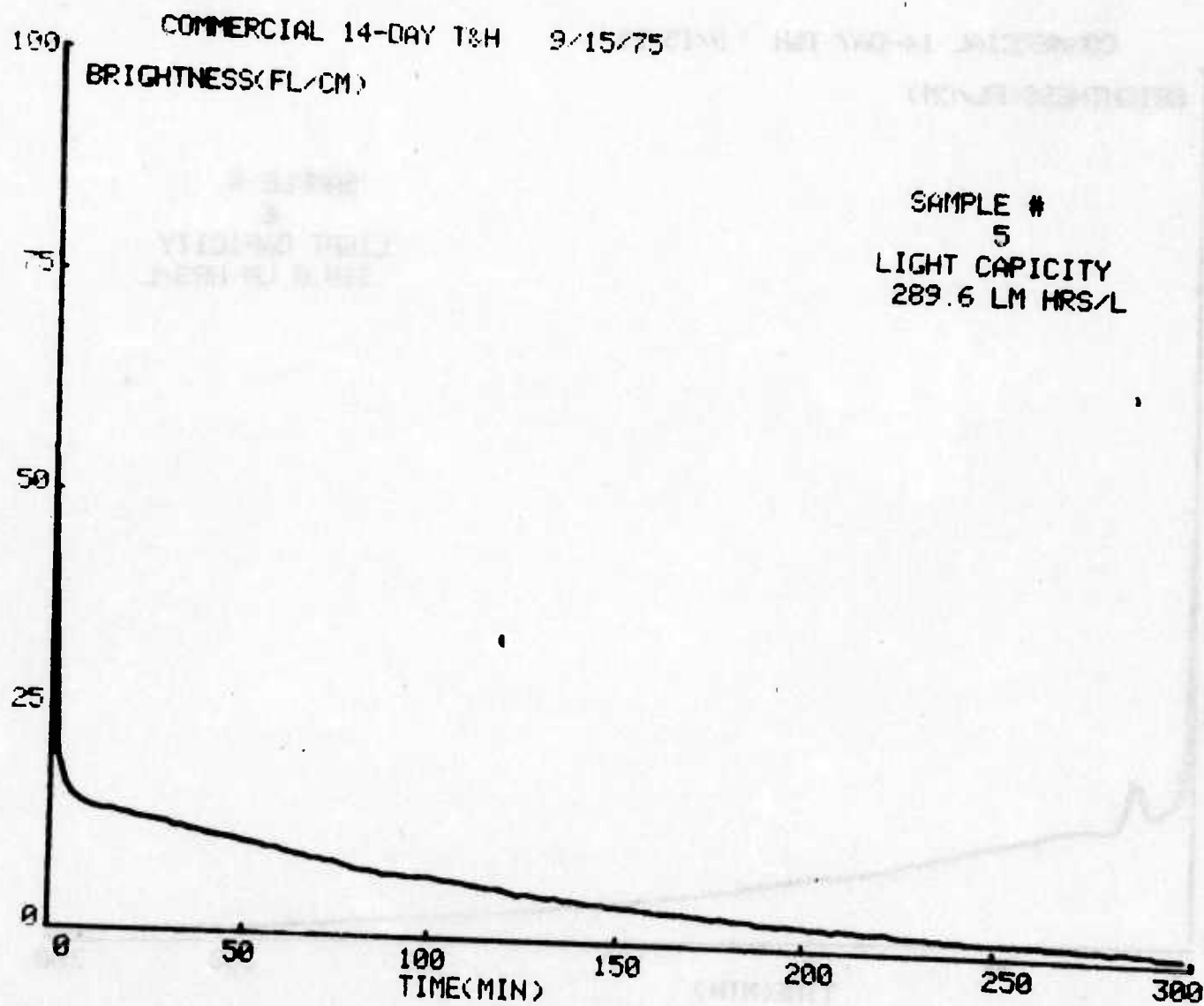




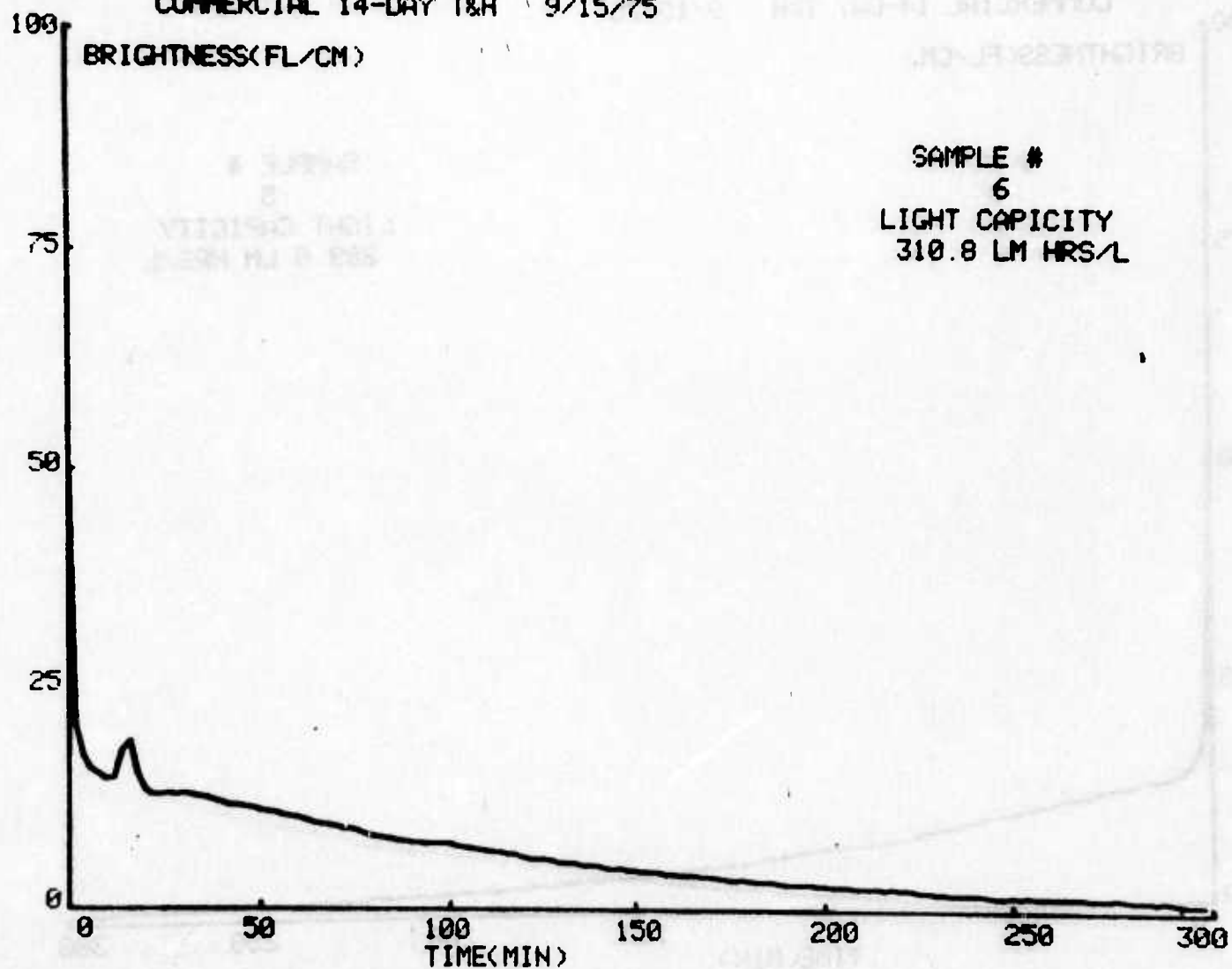








COMMERCIAL 14-DAY T&H 9/15/75

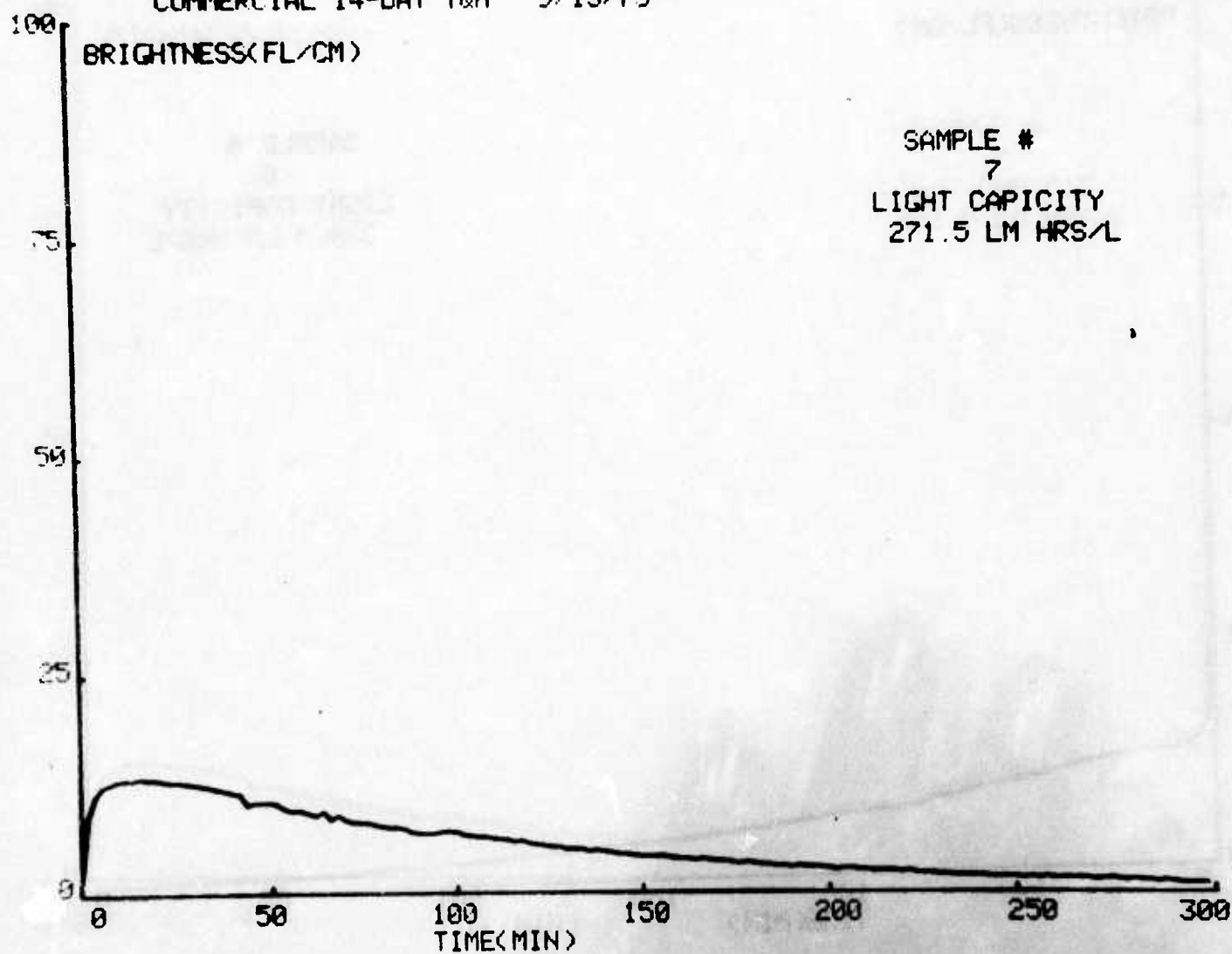


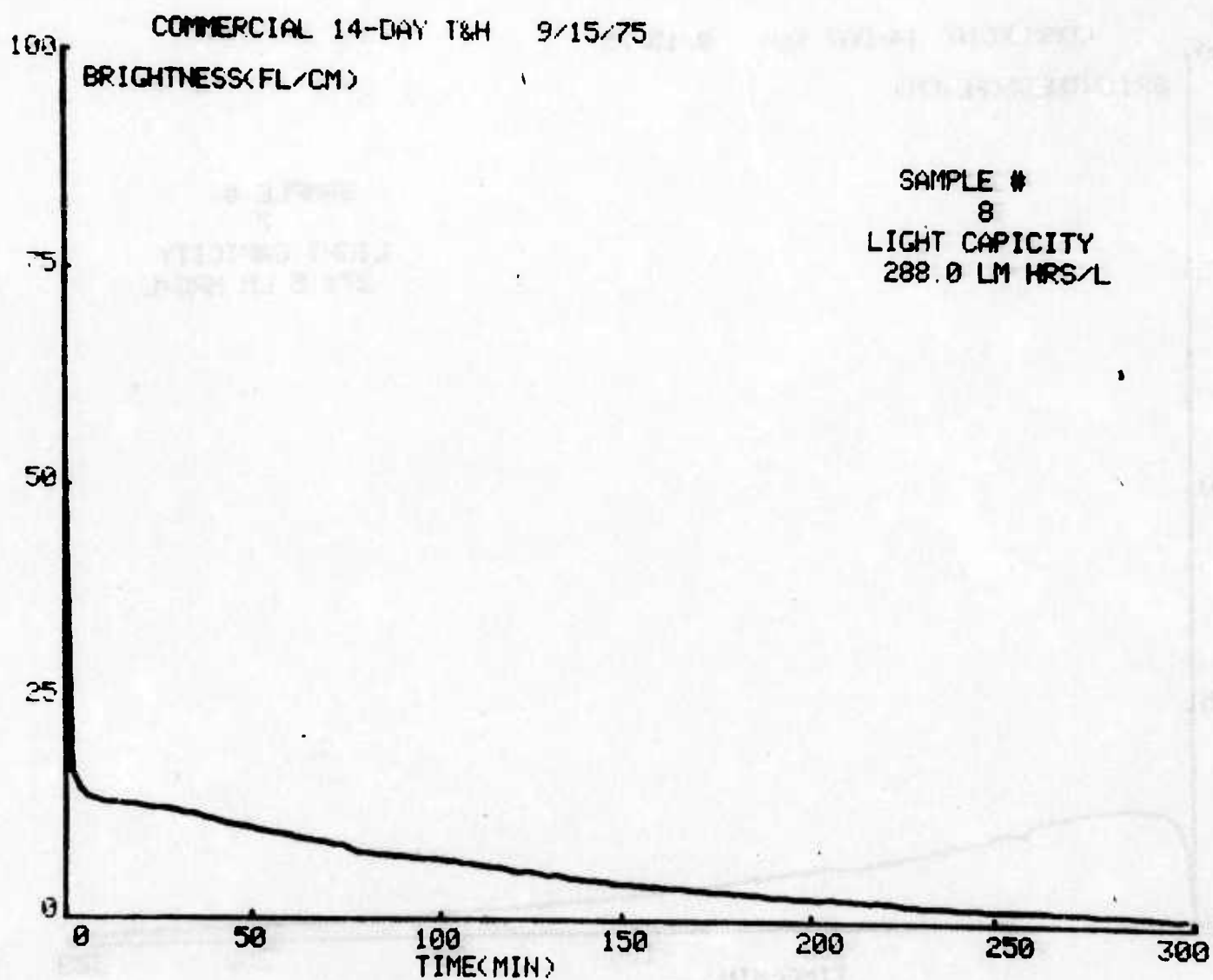


COMMERCIAL 14-DAY T&H 9/15/75

BRIGHTNESS(FL/CM)

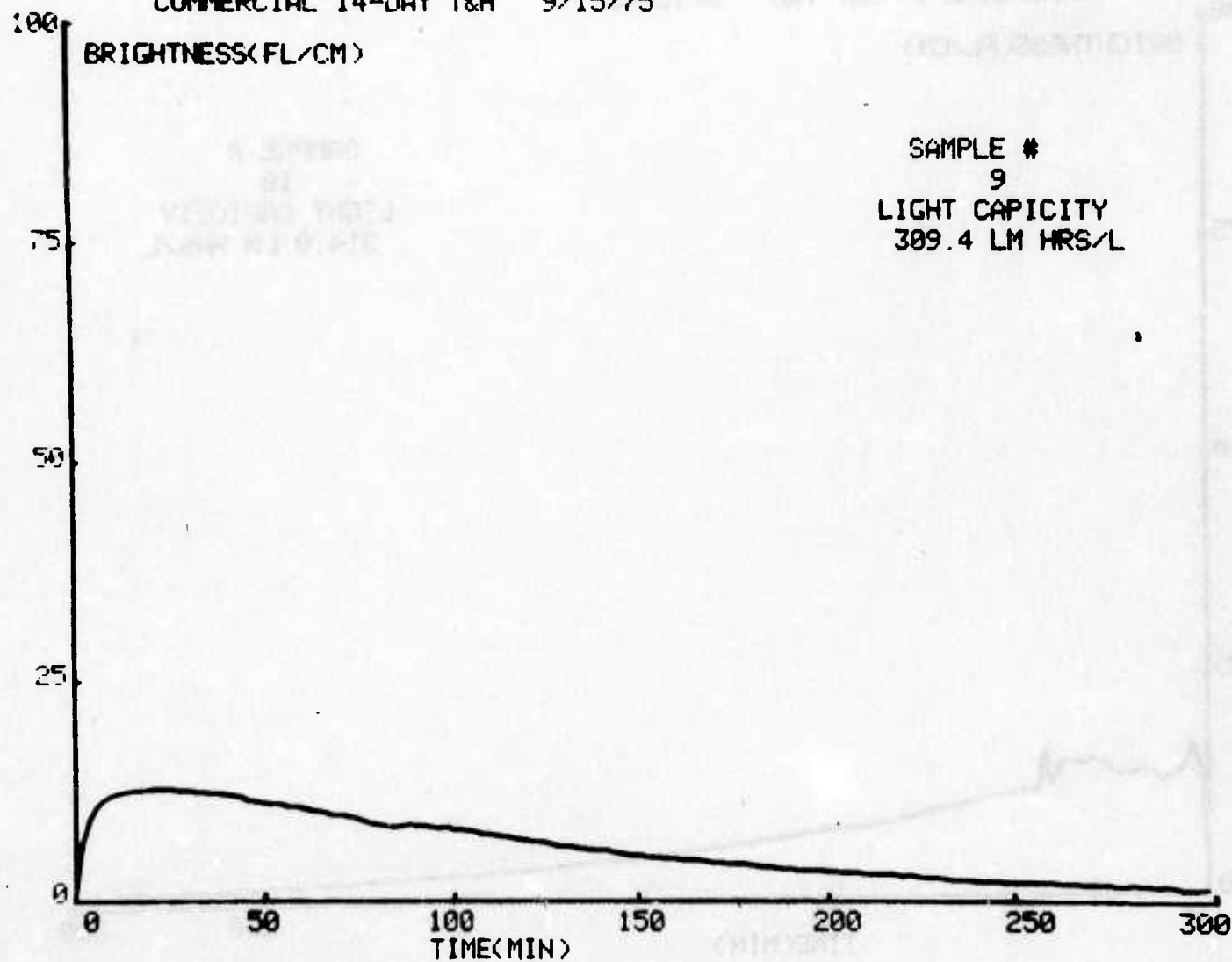
SAMPLE #  
7  
LIGHT CAPACITY  
271.5 LM HRS/L



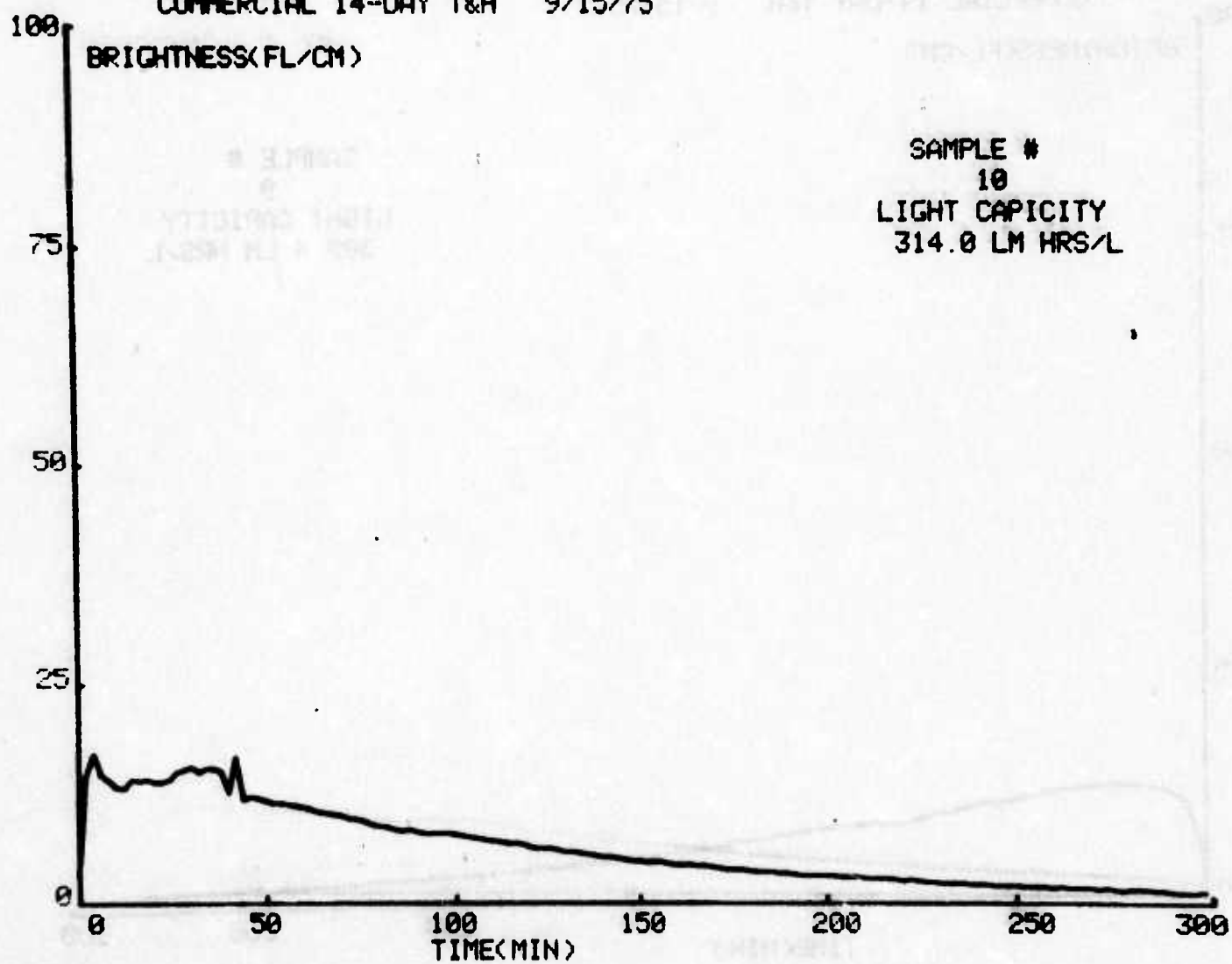


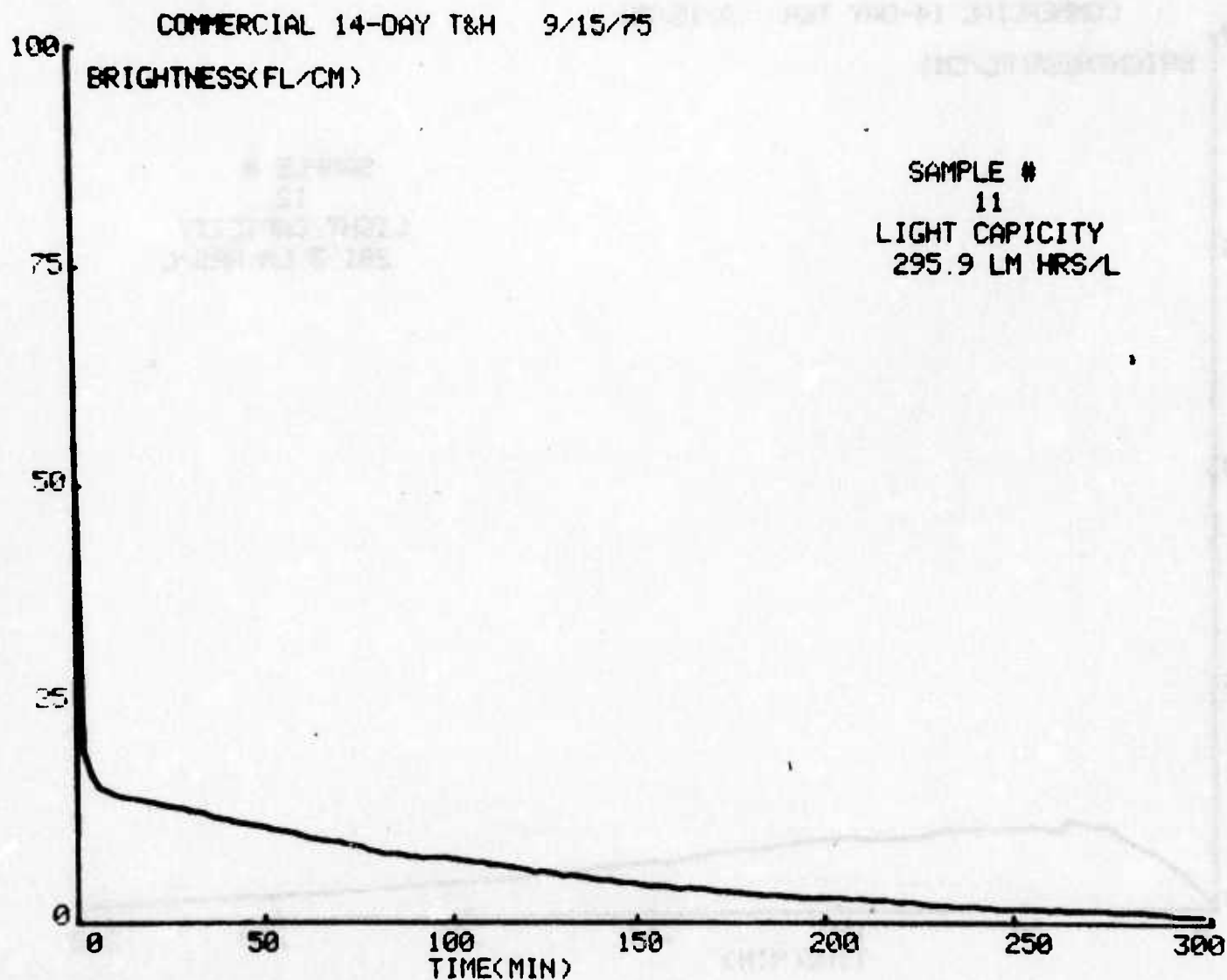


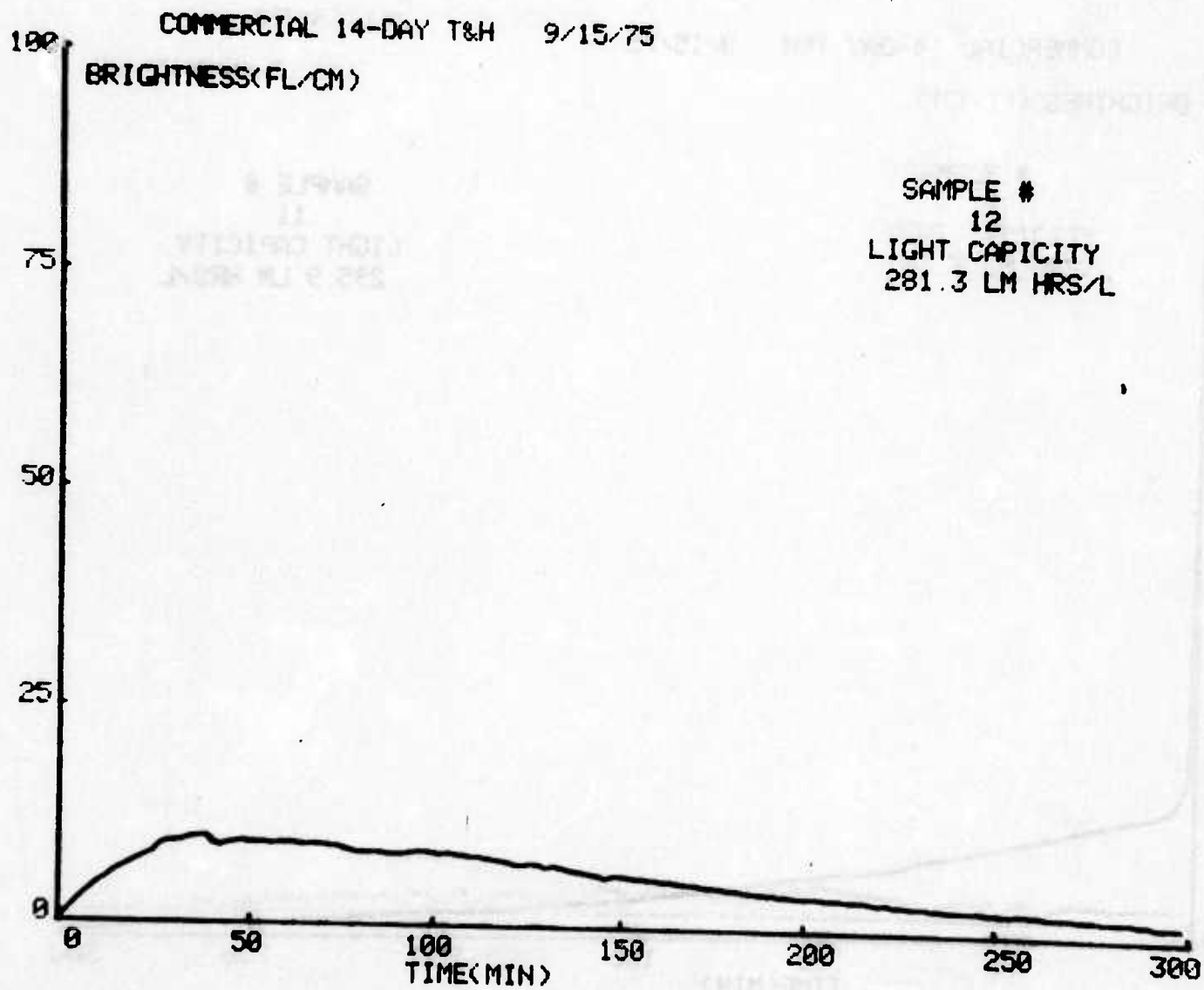
COMMERCIAL 14-DAY T&H 9/15/75



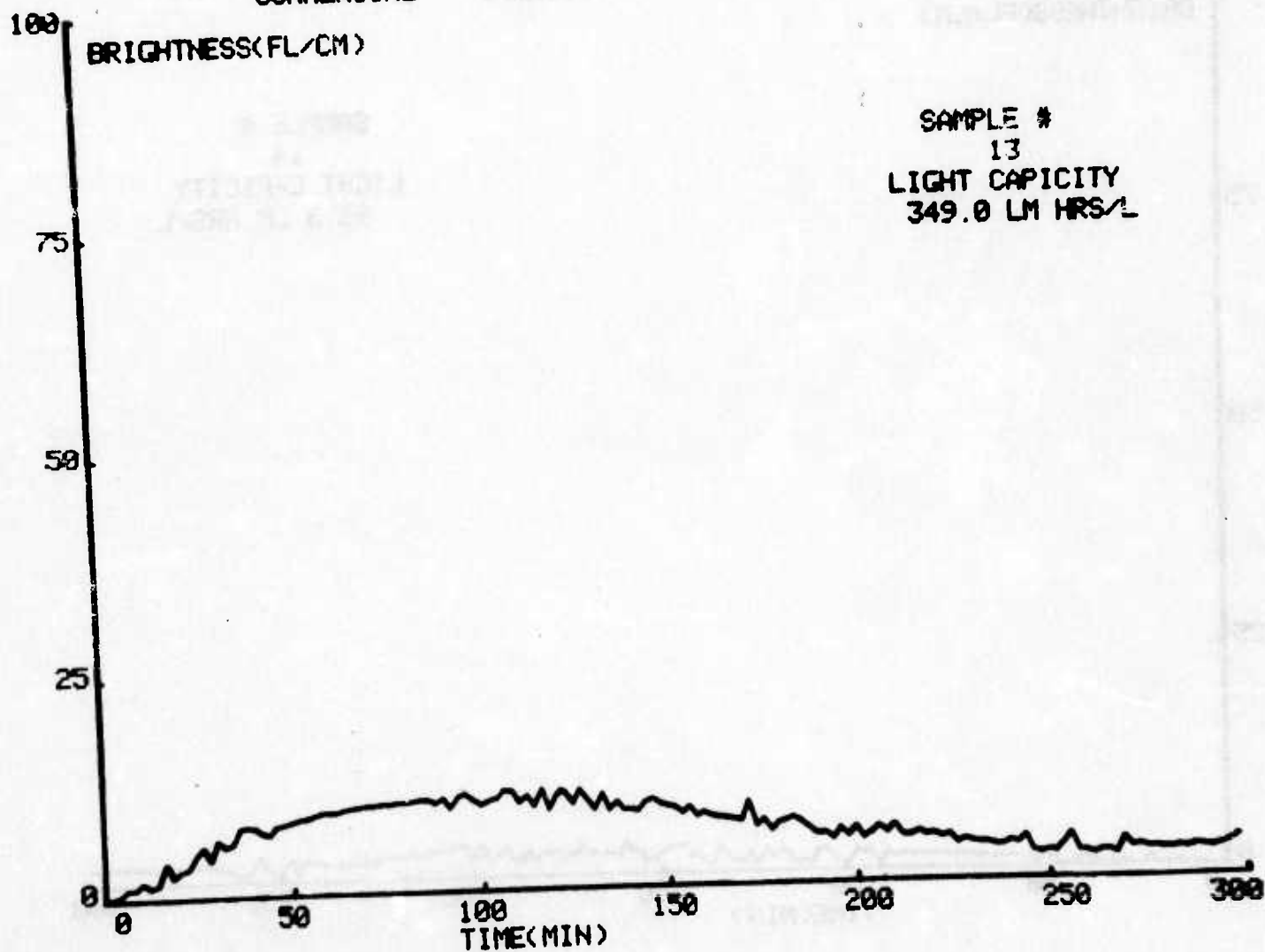
COMMERCIAL 14-DAY T&H 9/15/75

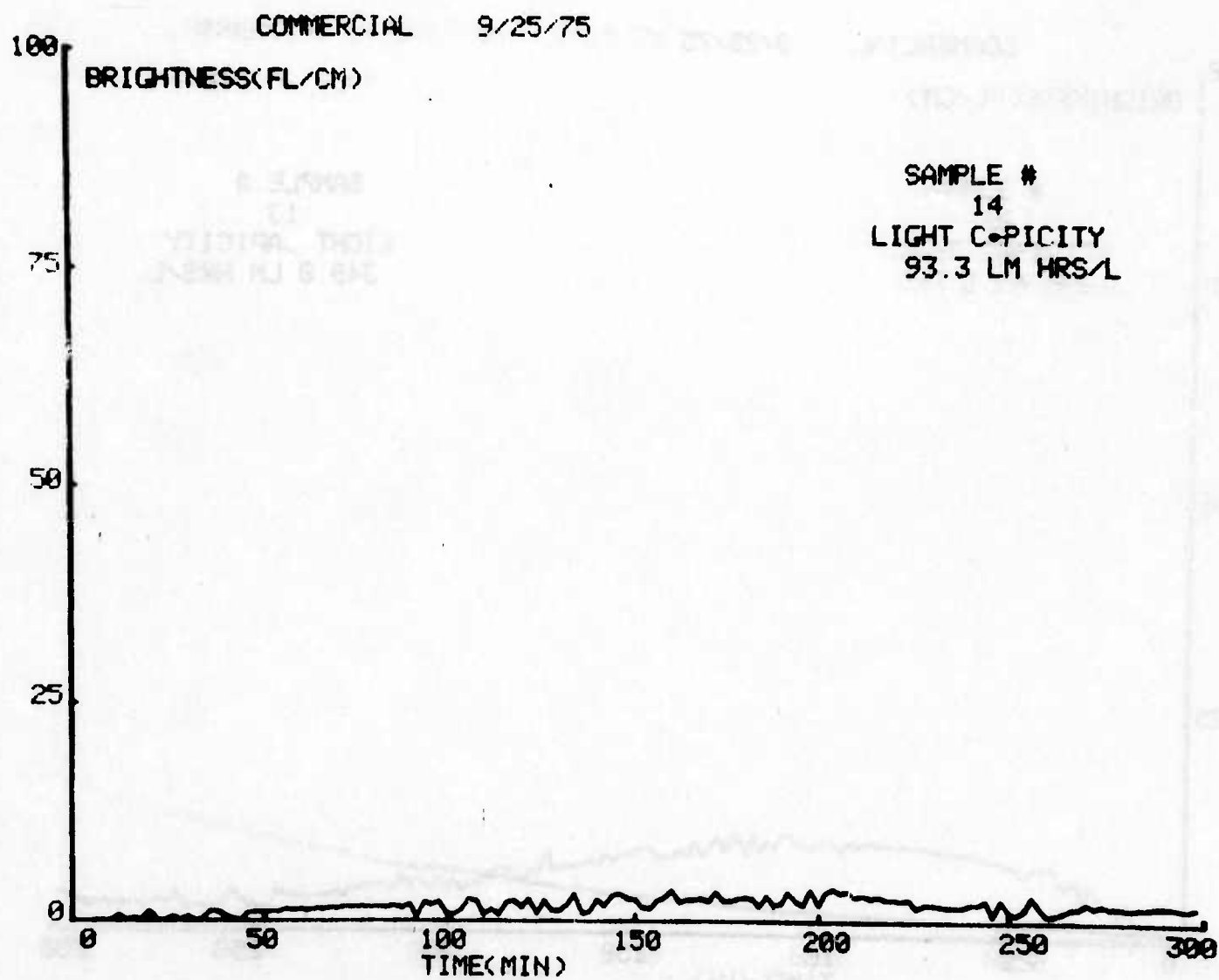


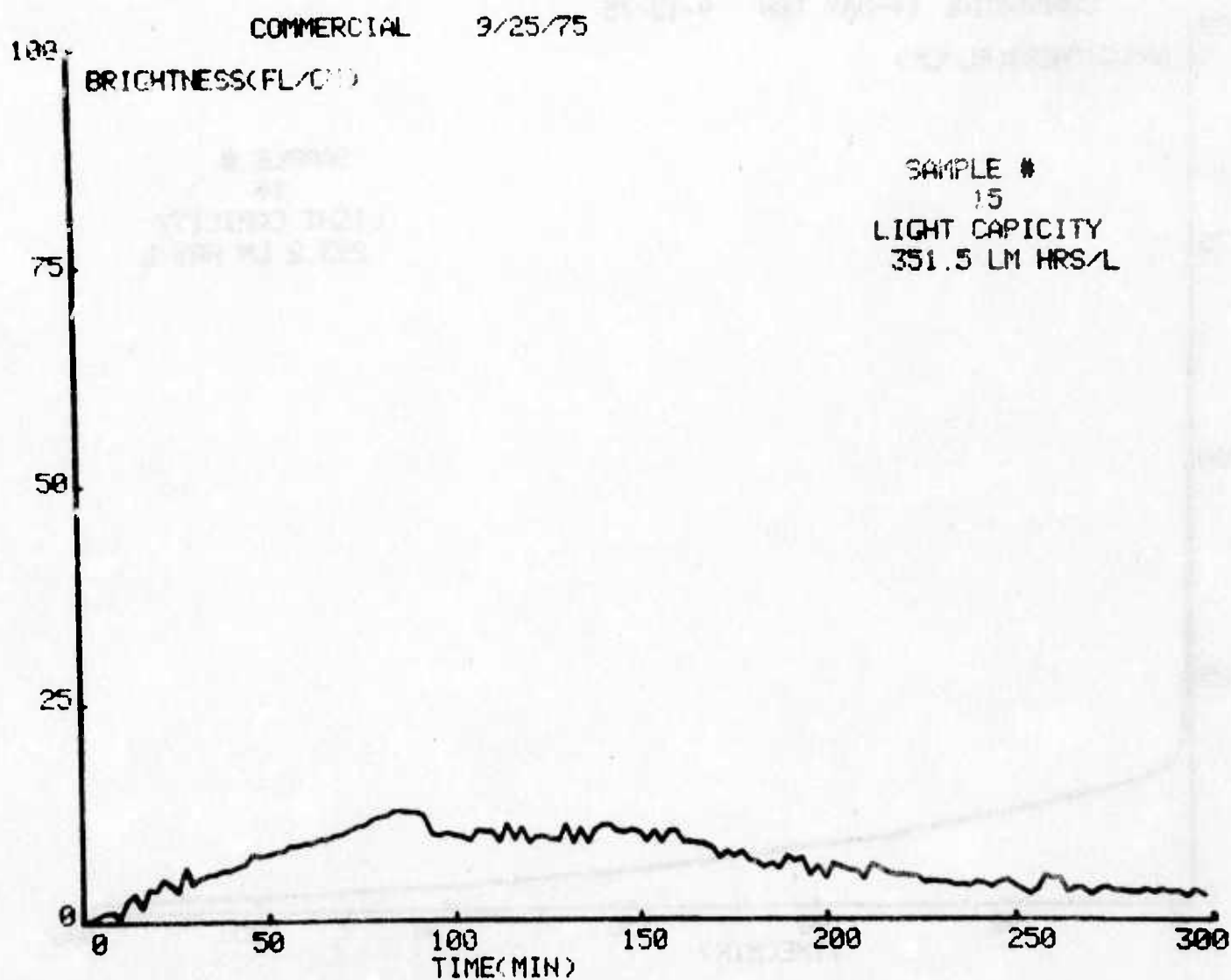




COMMERCIAL 9/25/75

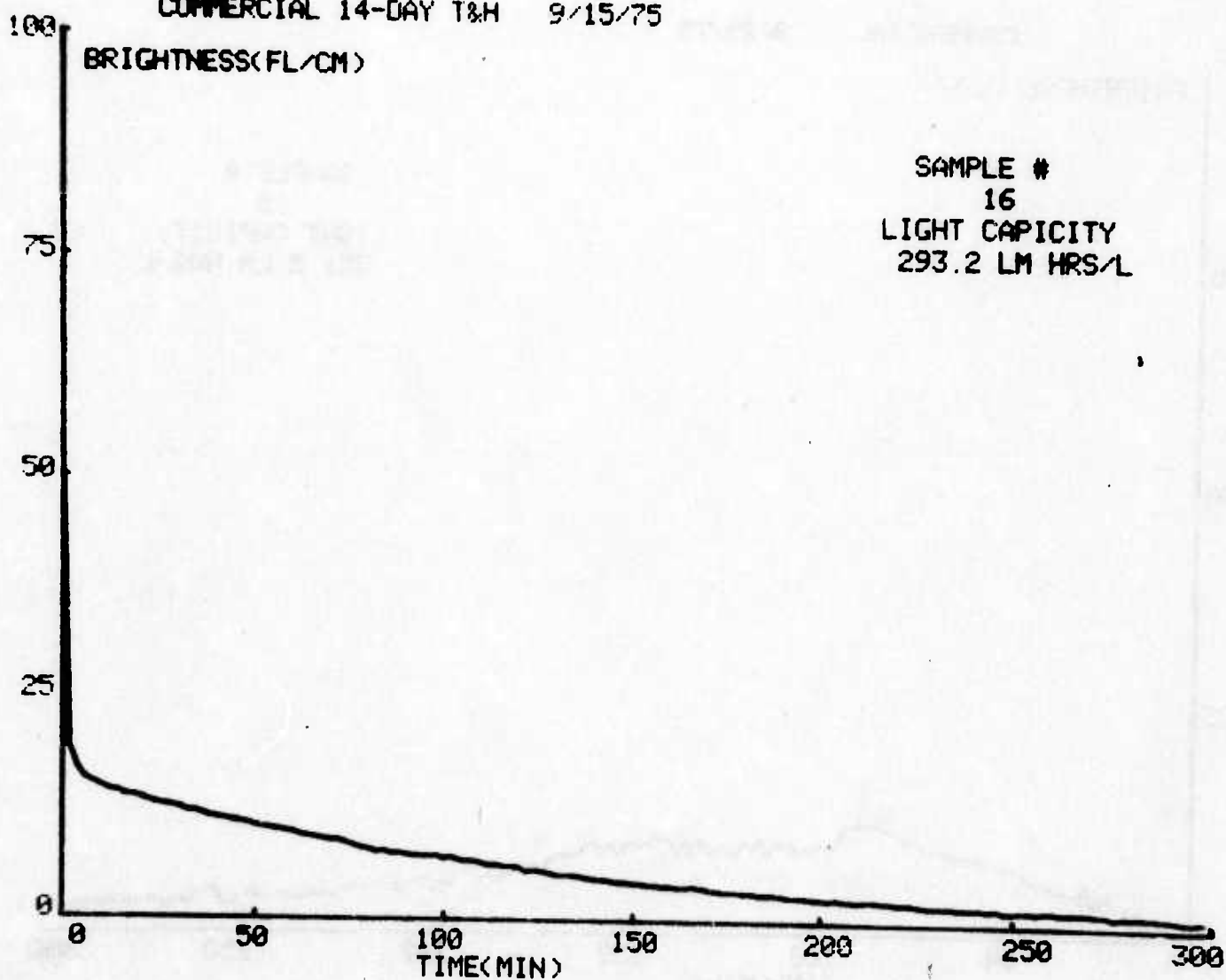




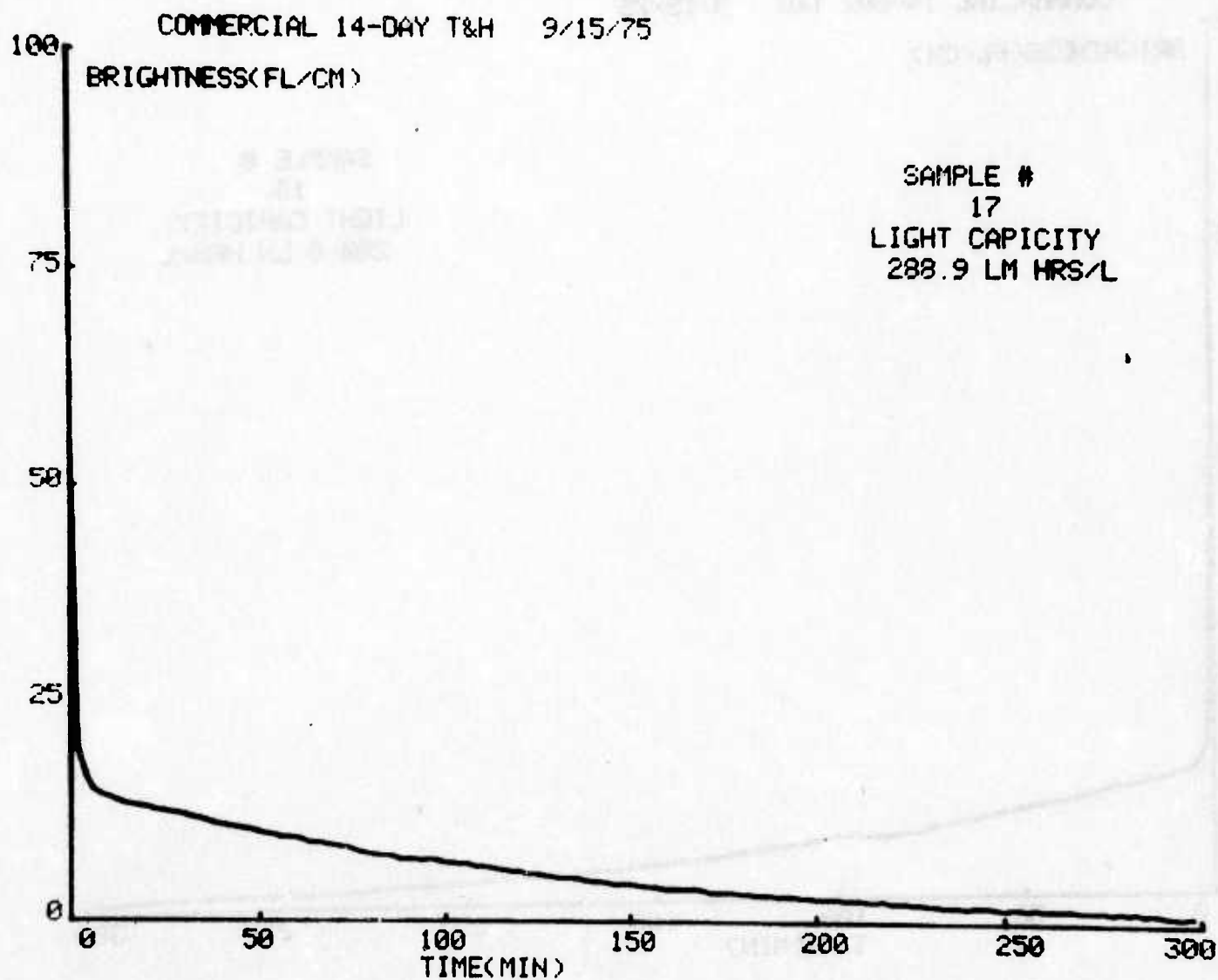




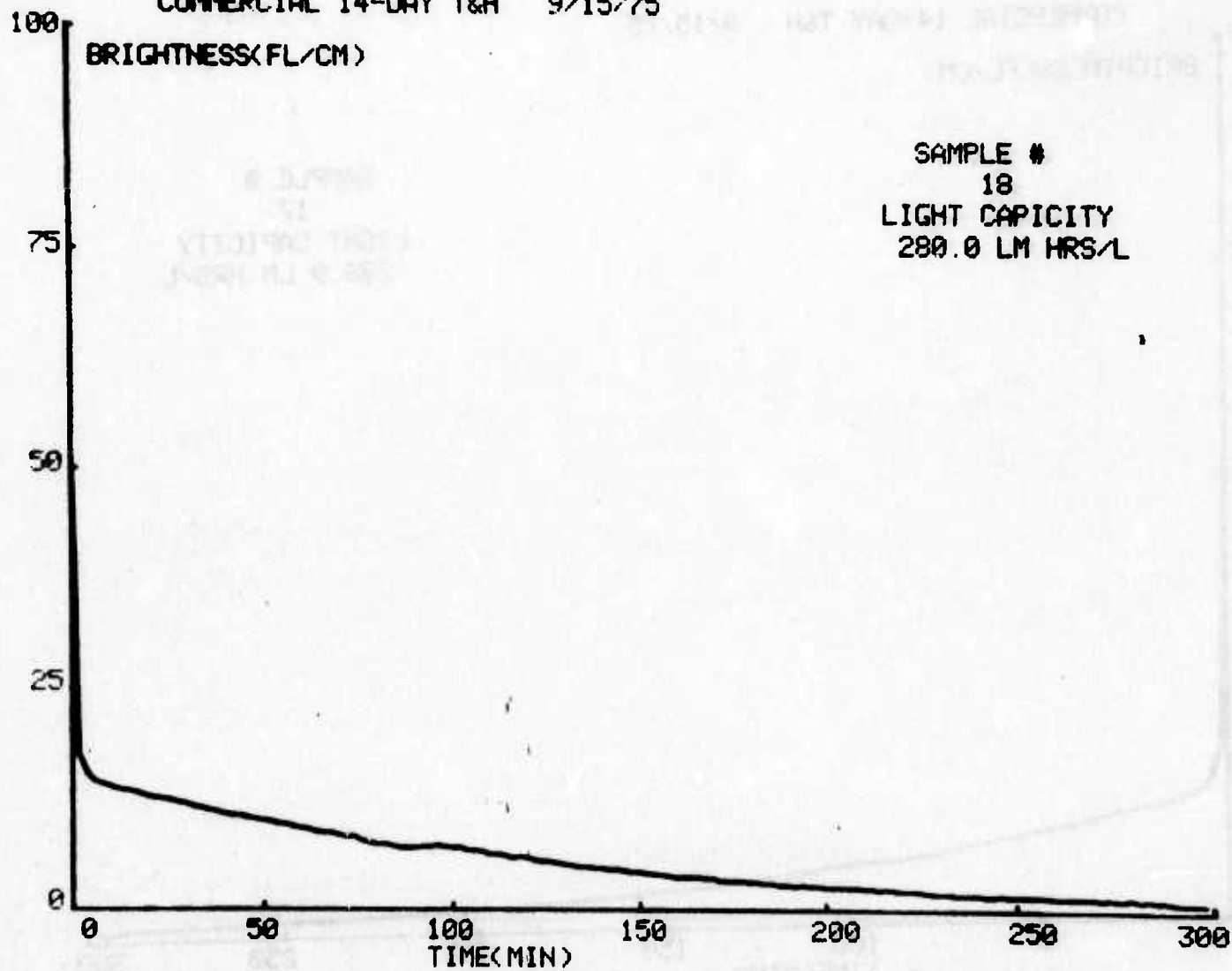
COMMERCIAL 14-DAY T&H 9/15/75

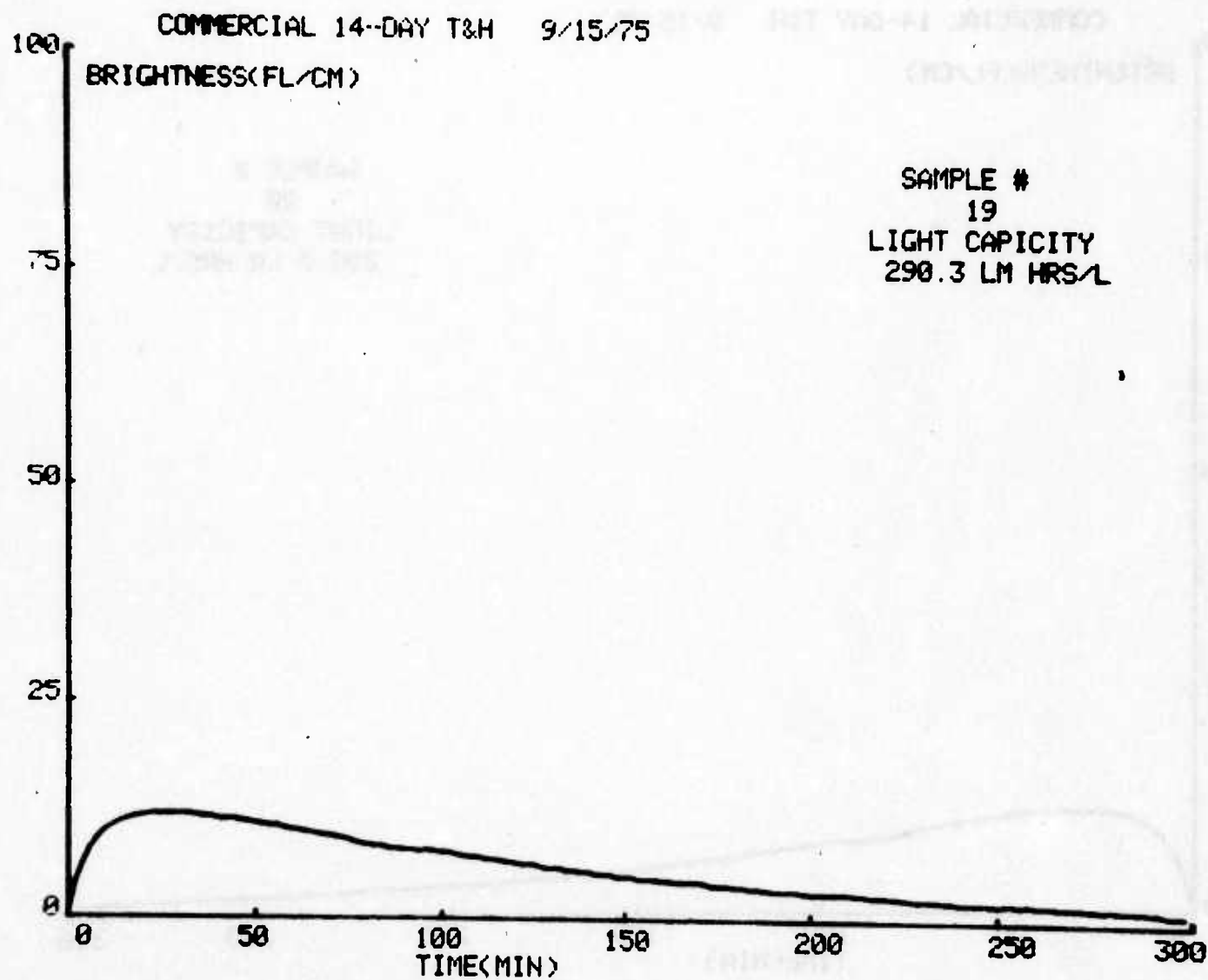






COMMERCIAL 14-DAY T&H 9/15/75

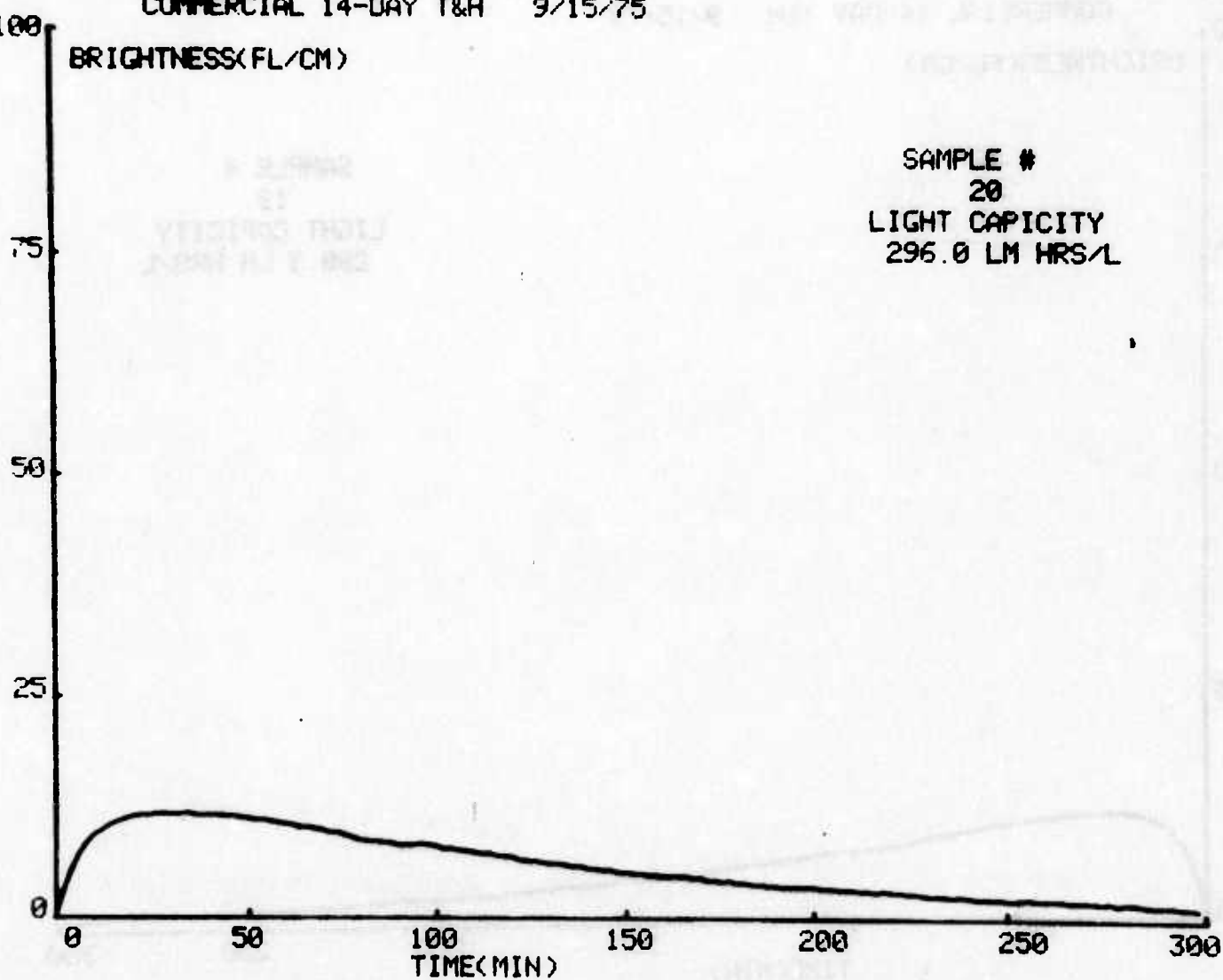


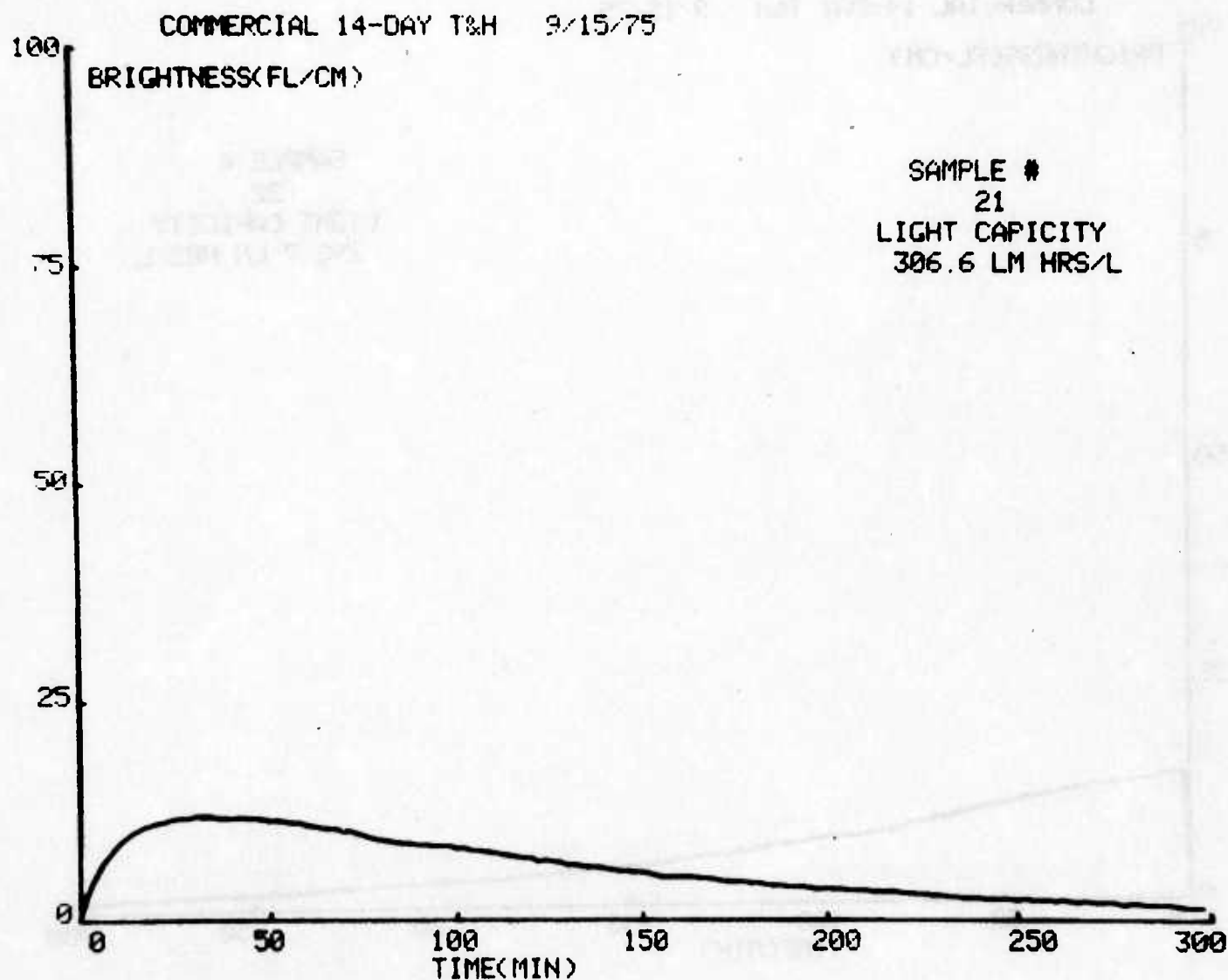


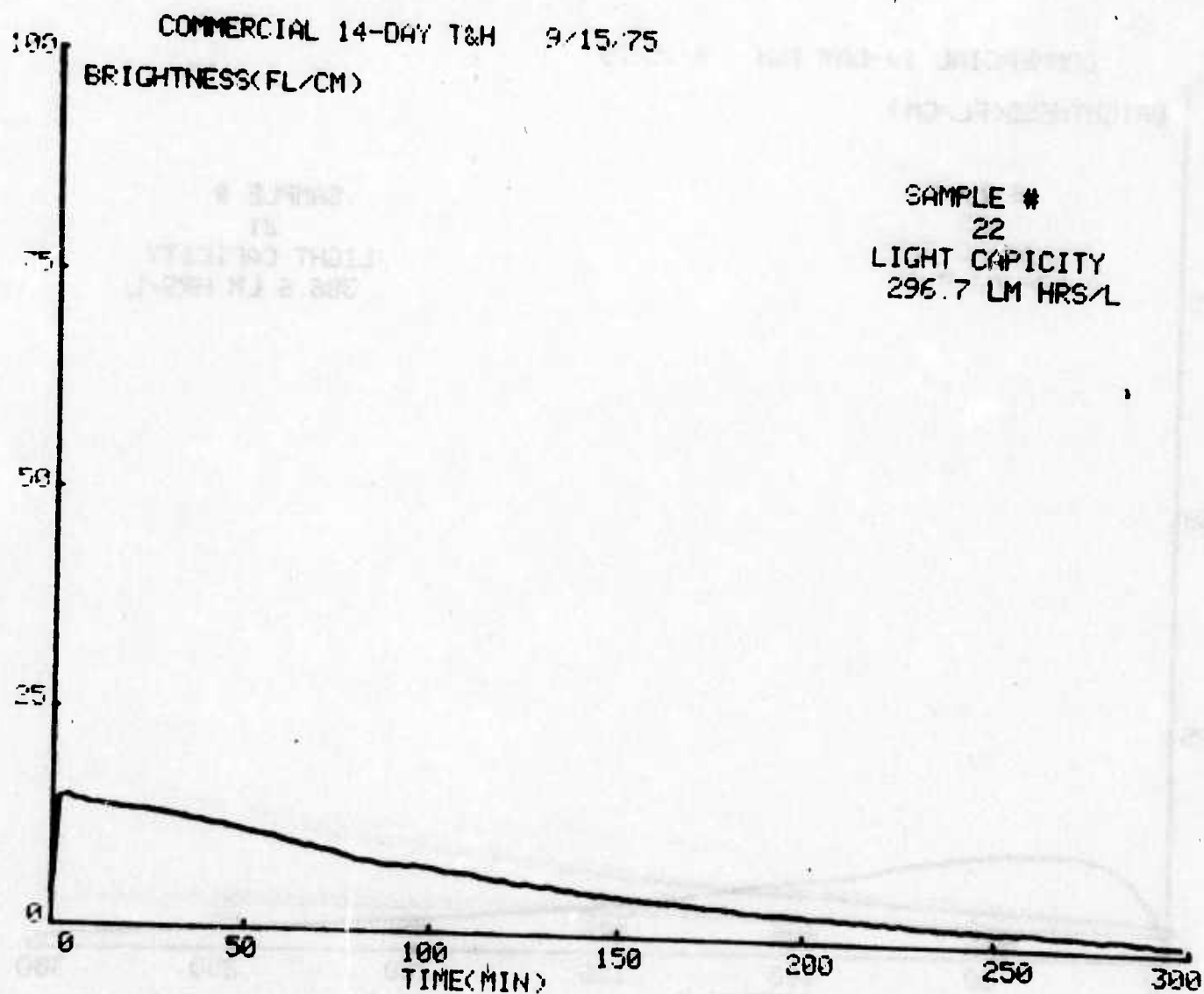
COMMERCIAL 14-DAY T&H 9/15/75

BRIGHTNESS(FL/CM)

SAMPLE #  
20  
LIGHT CAPACITY  
296.0 LM HRS/L



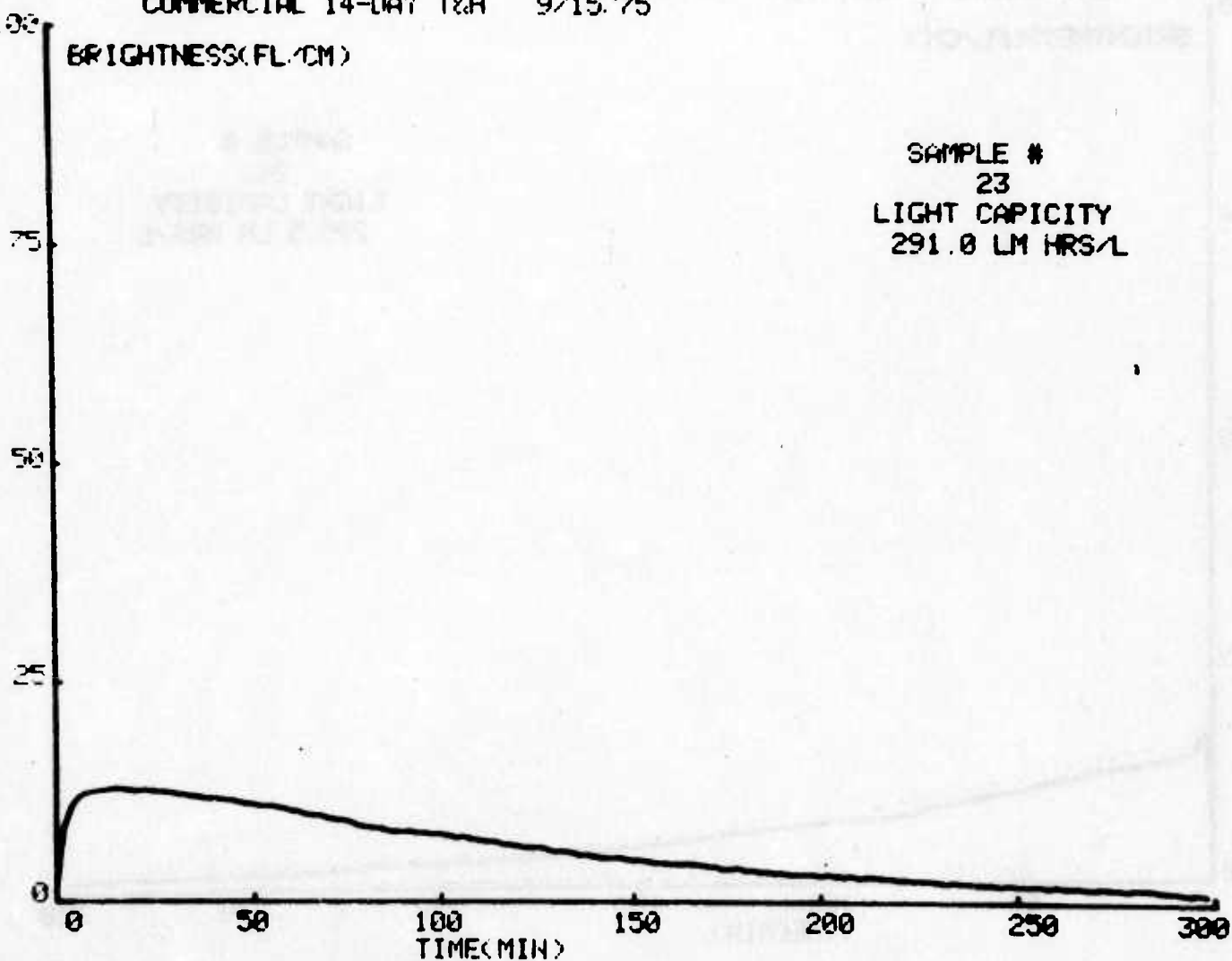




COMMERCIAL 14-DAY T&H 9/15/75

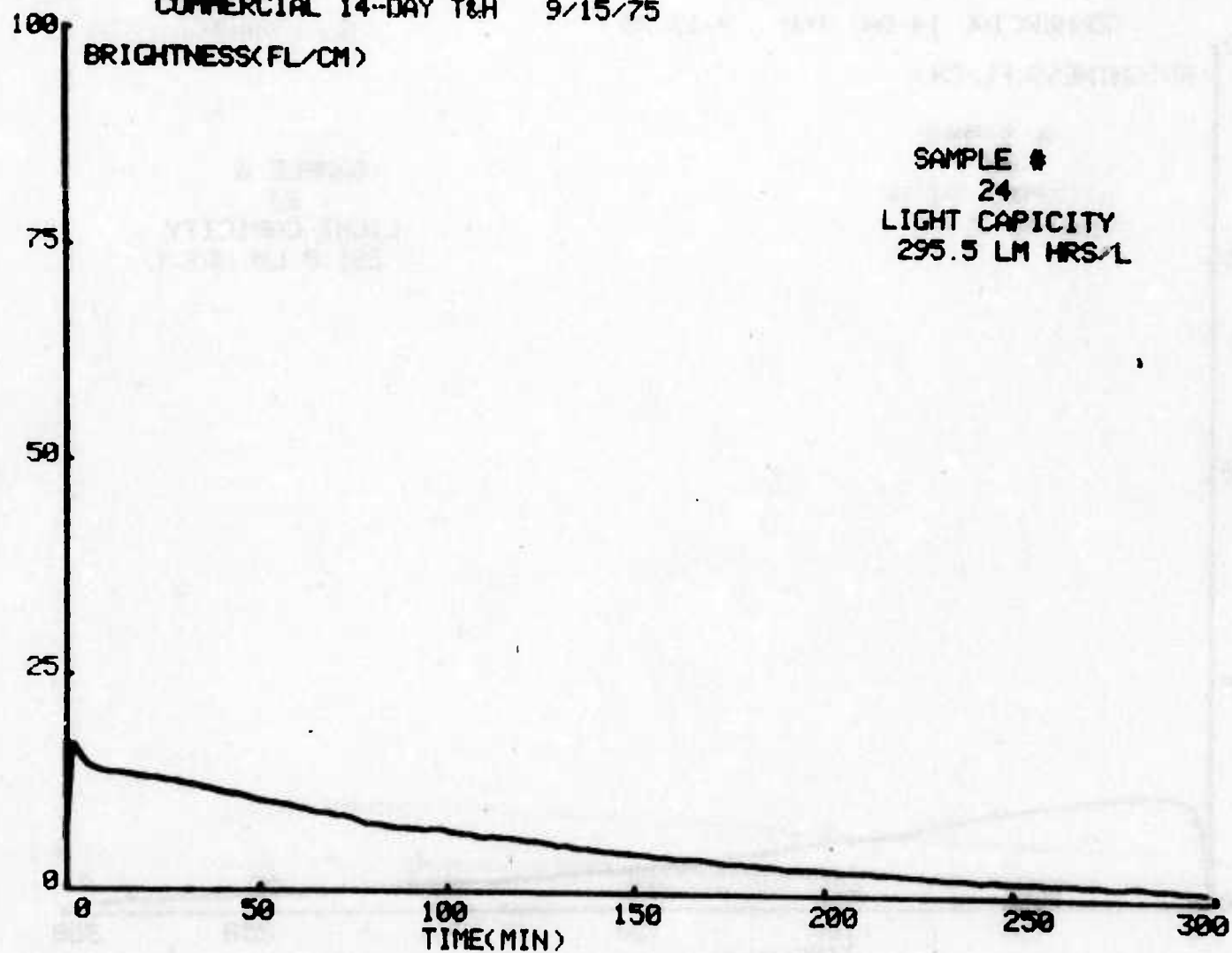
BRIGHTNESS(FL/CM)

SAMPLE #  
23  
LIGHT CAPACITY  
291.0 LM HRS/L

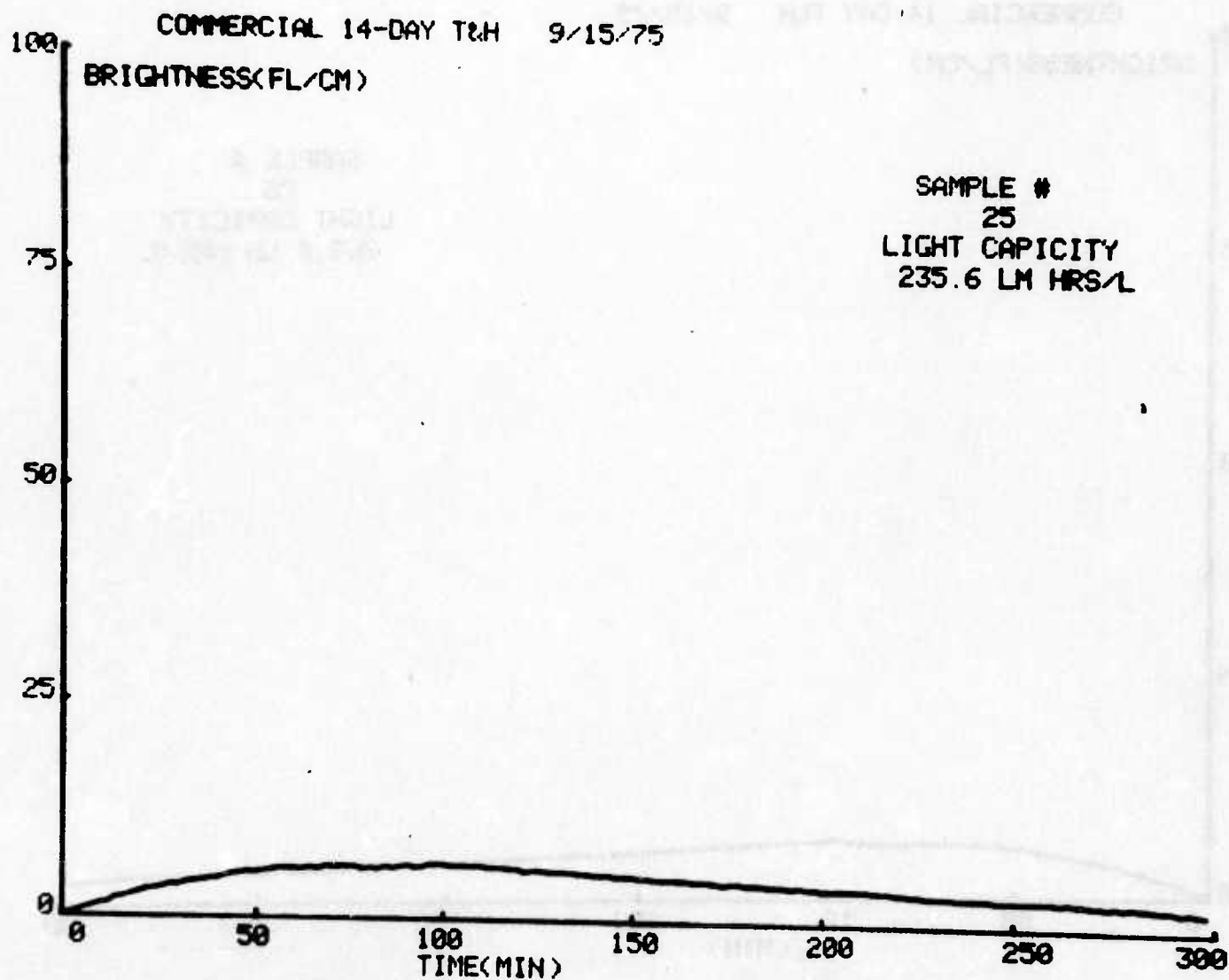




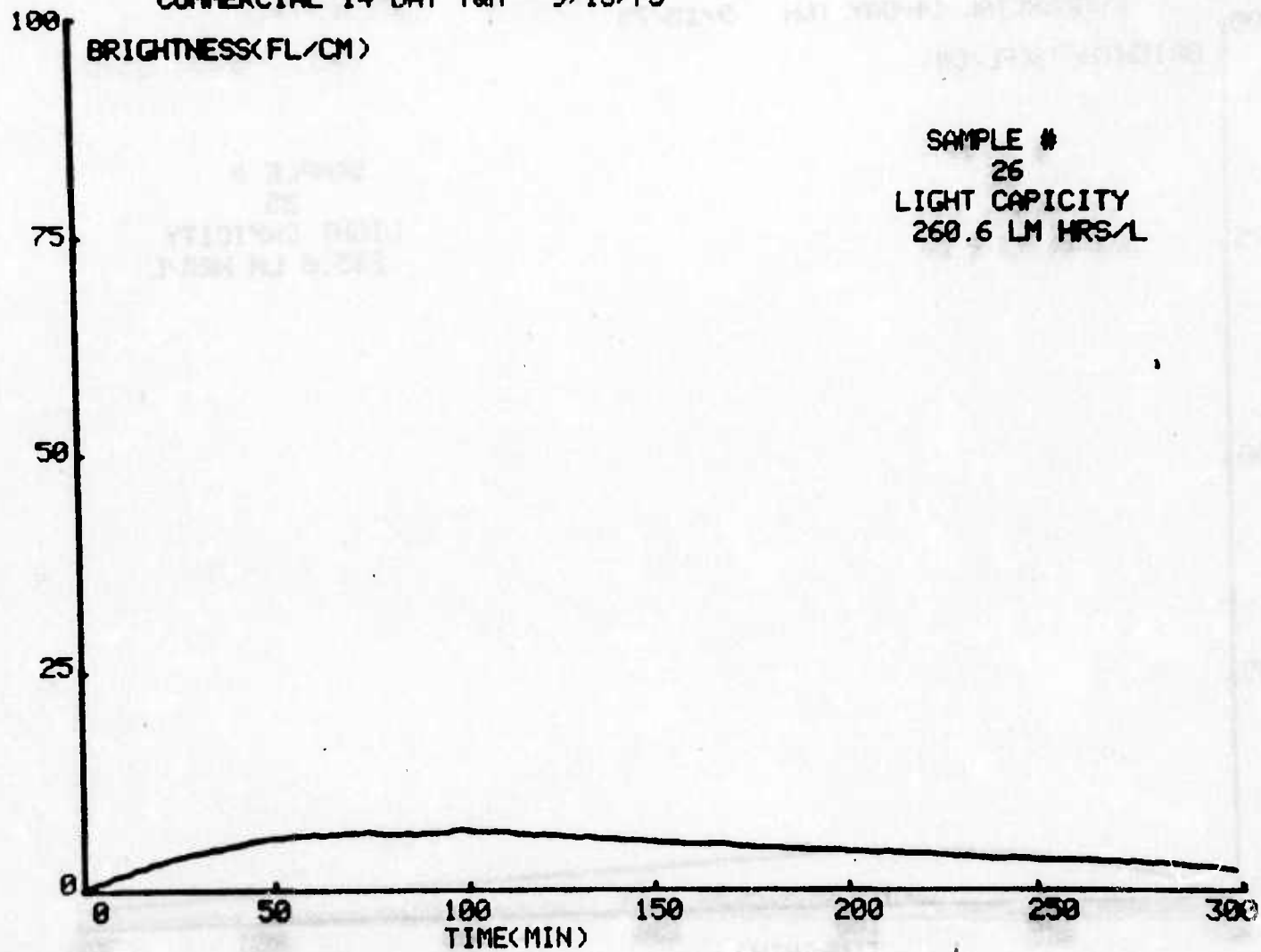
COMMERCIAL 14-DAY T&H 9/15/75

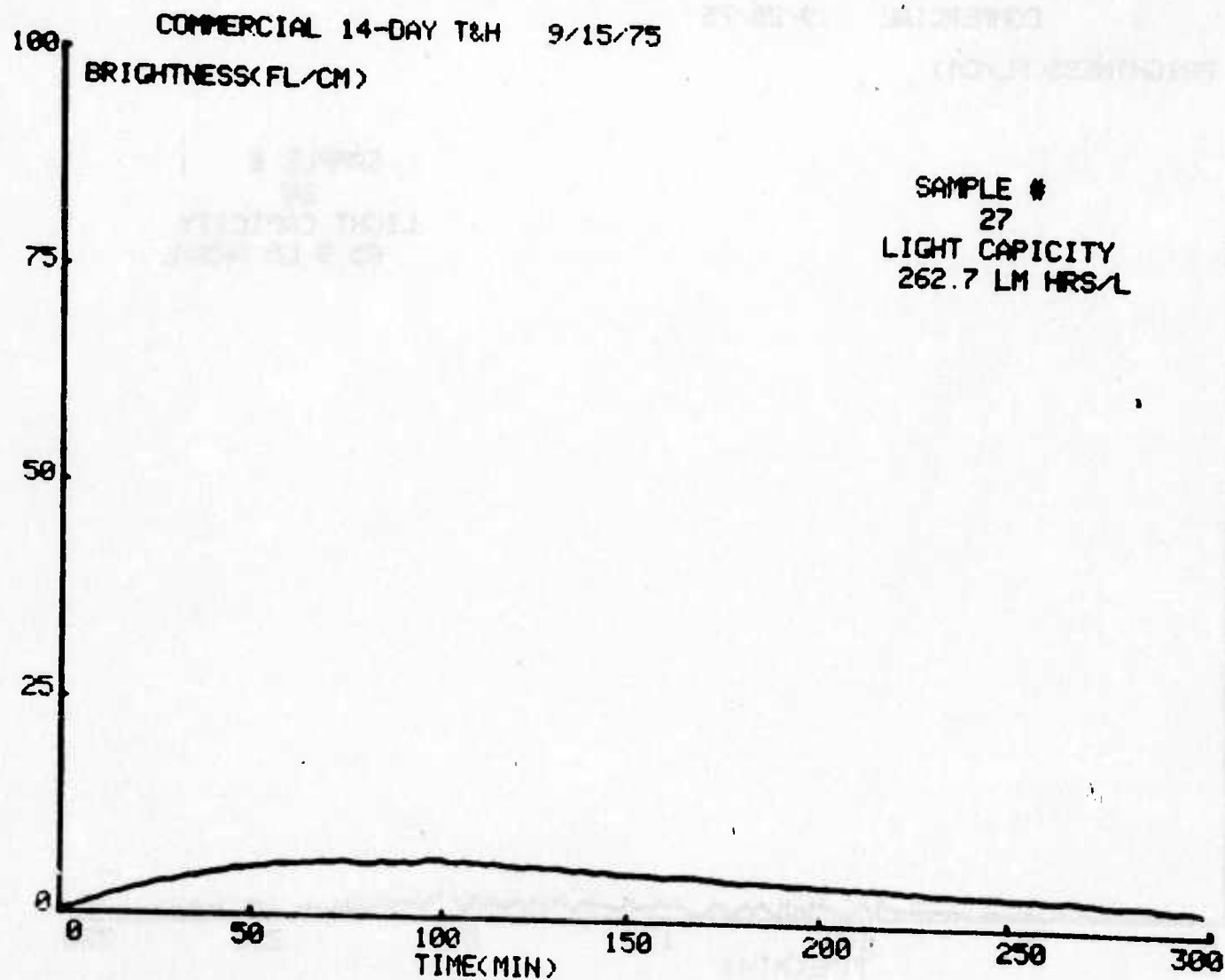


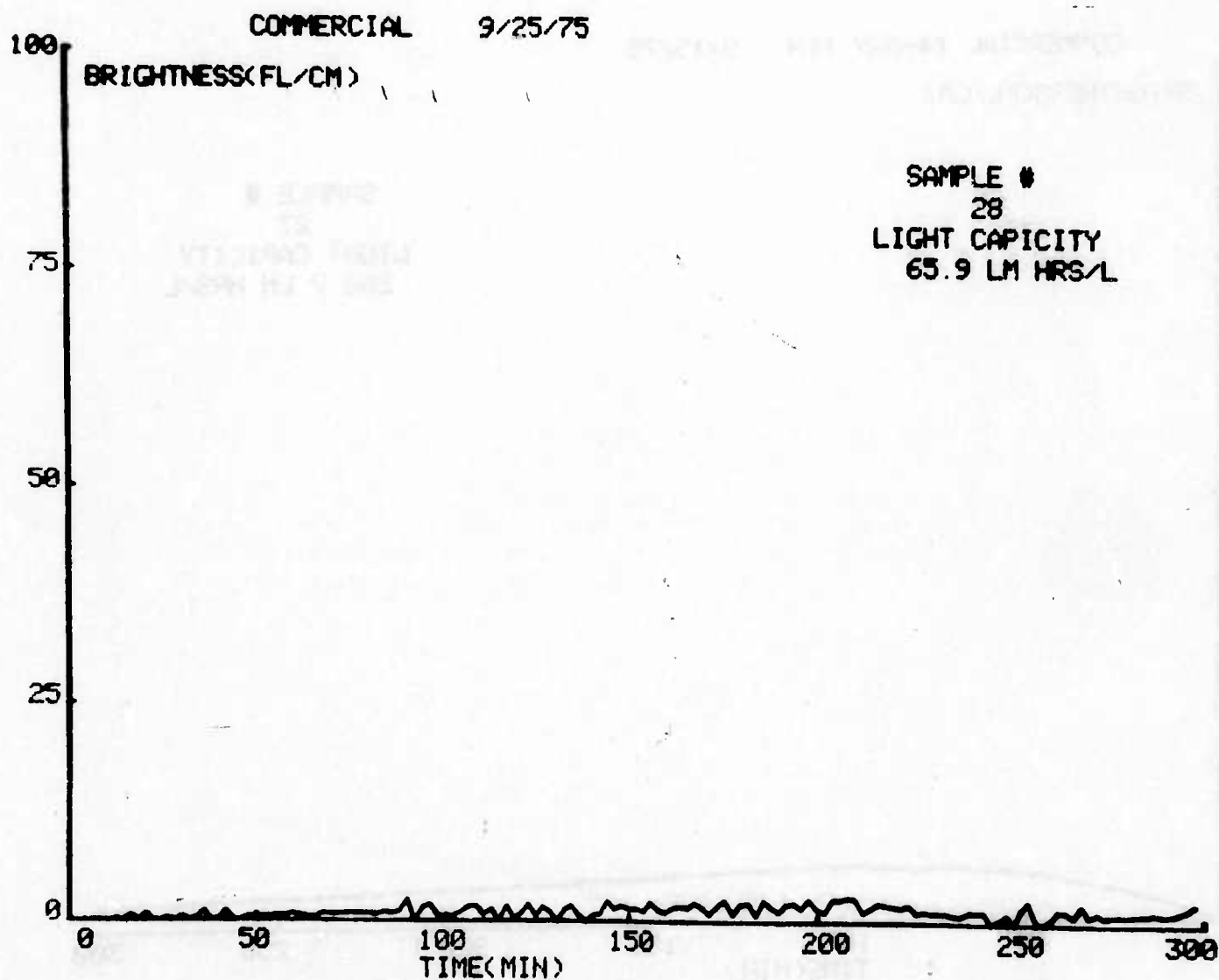


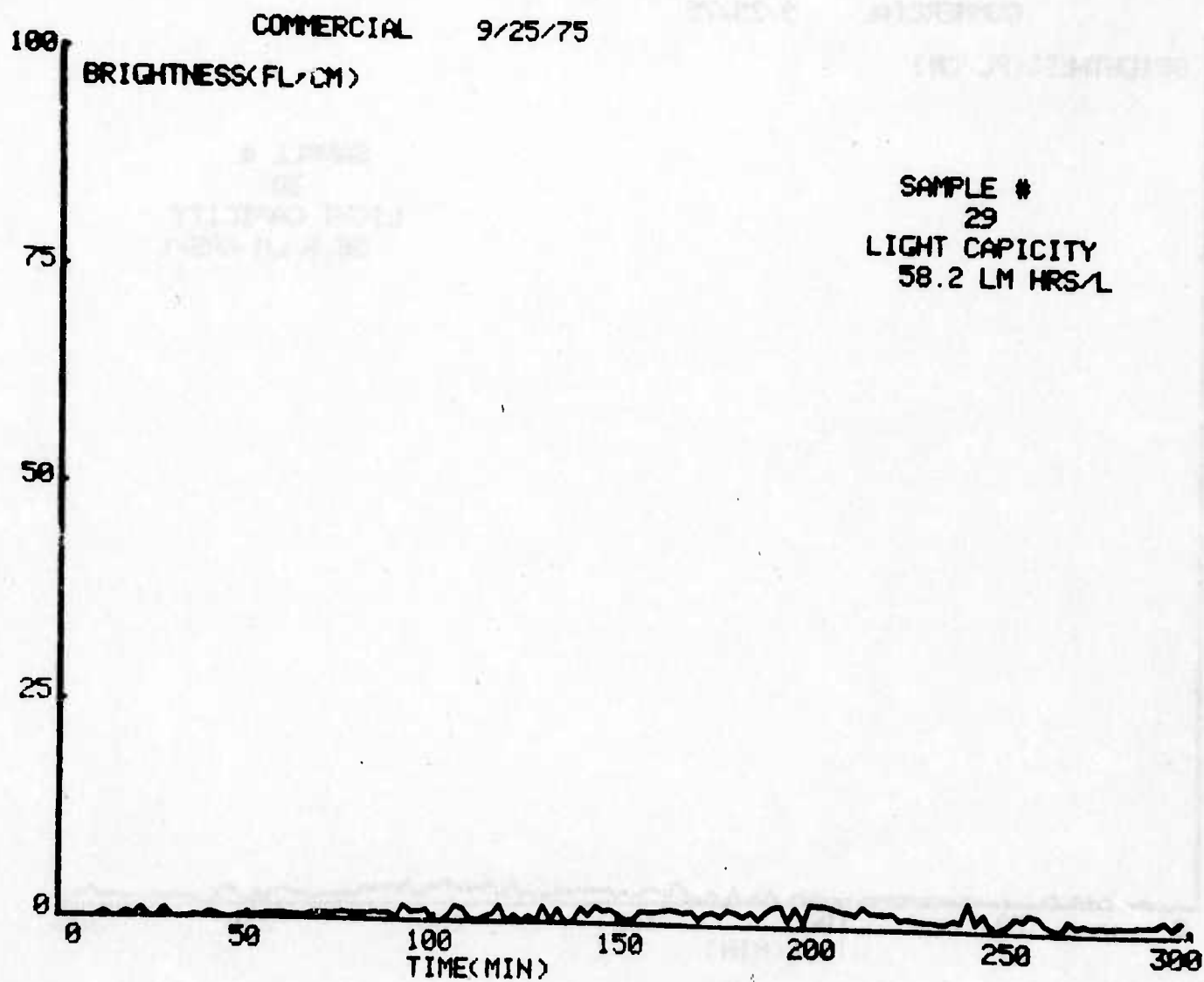


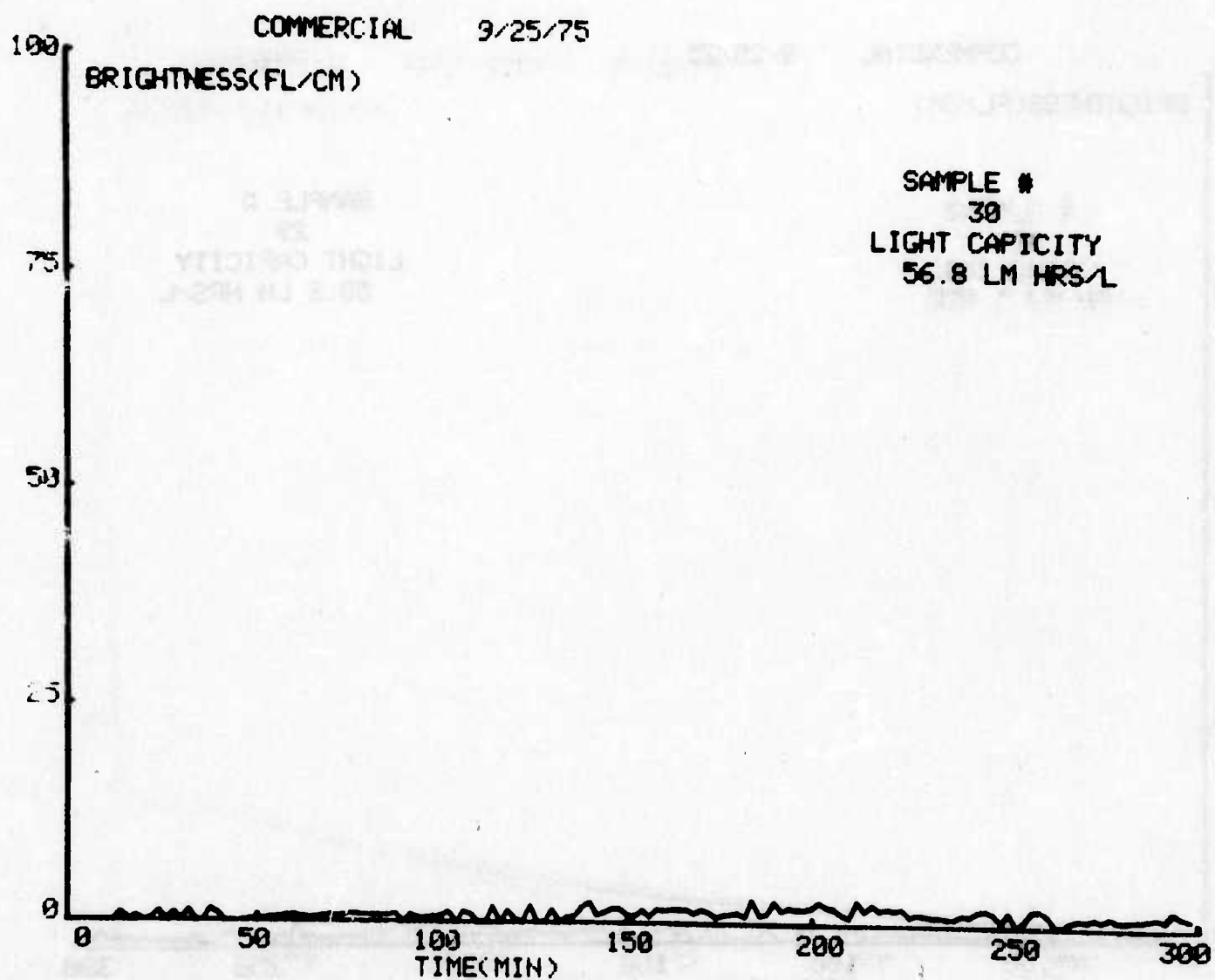
COMMERCIAL 14-DAY T&H 9/15/75

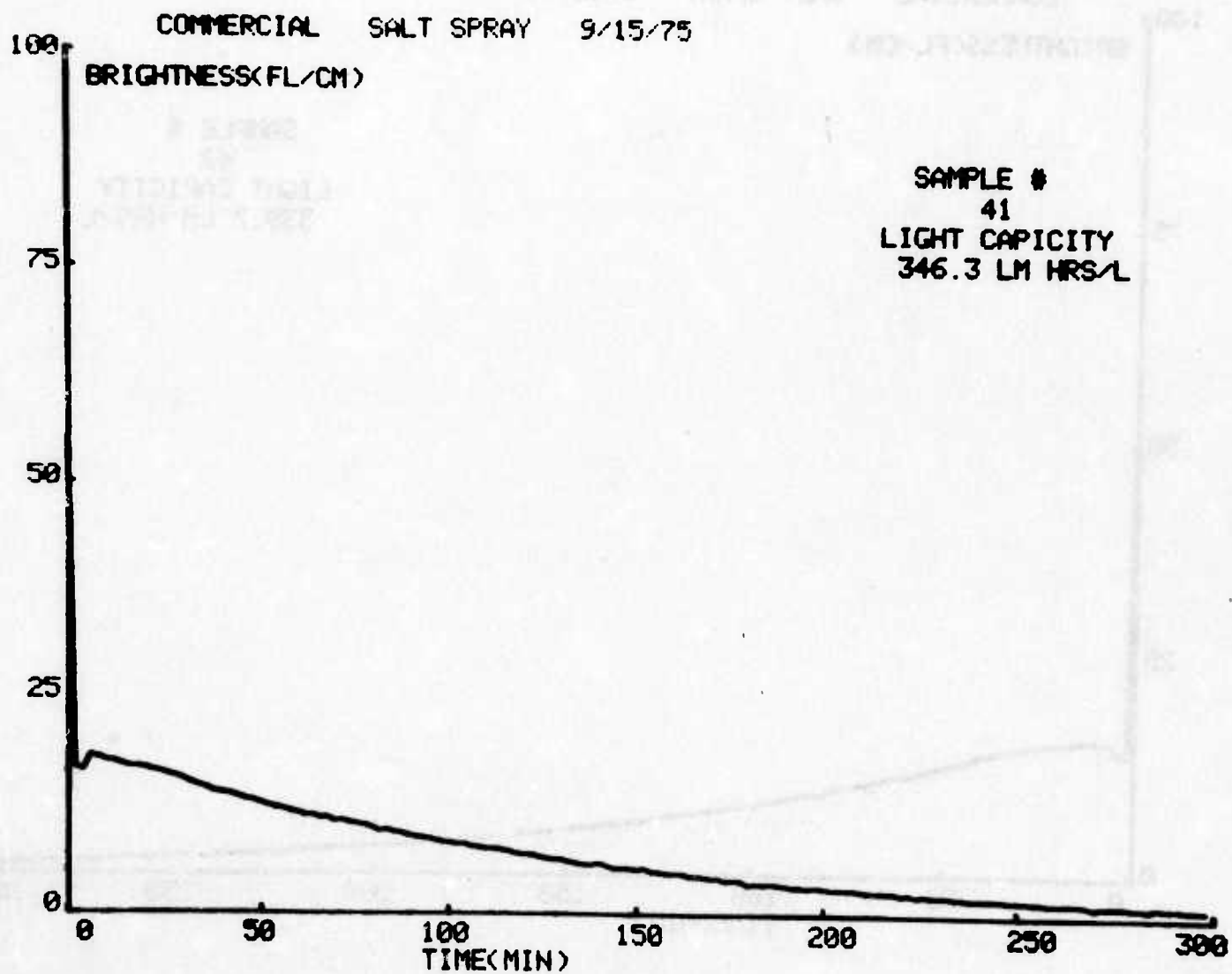






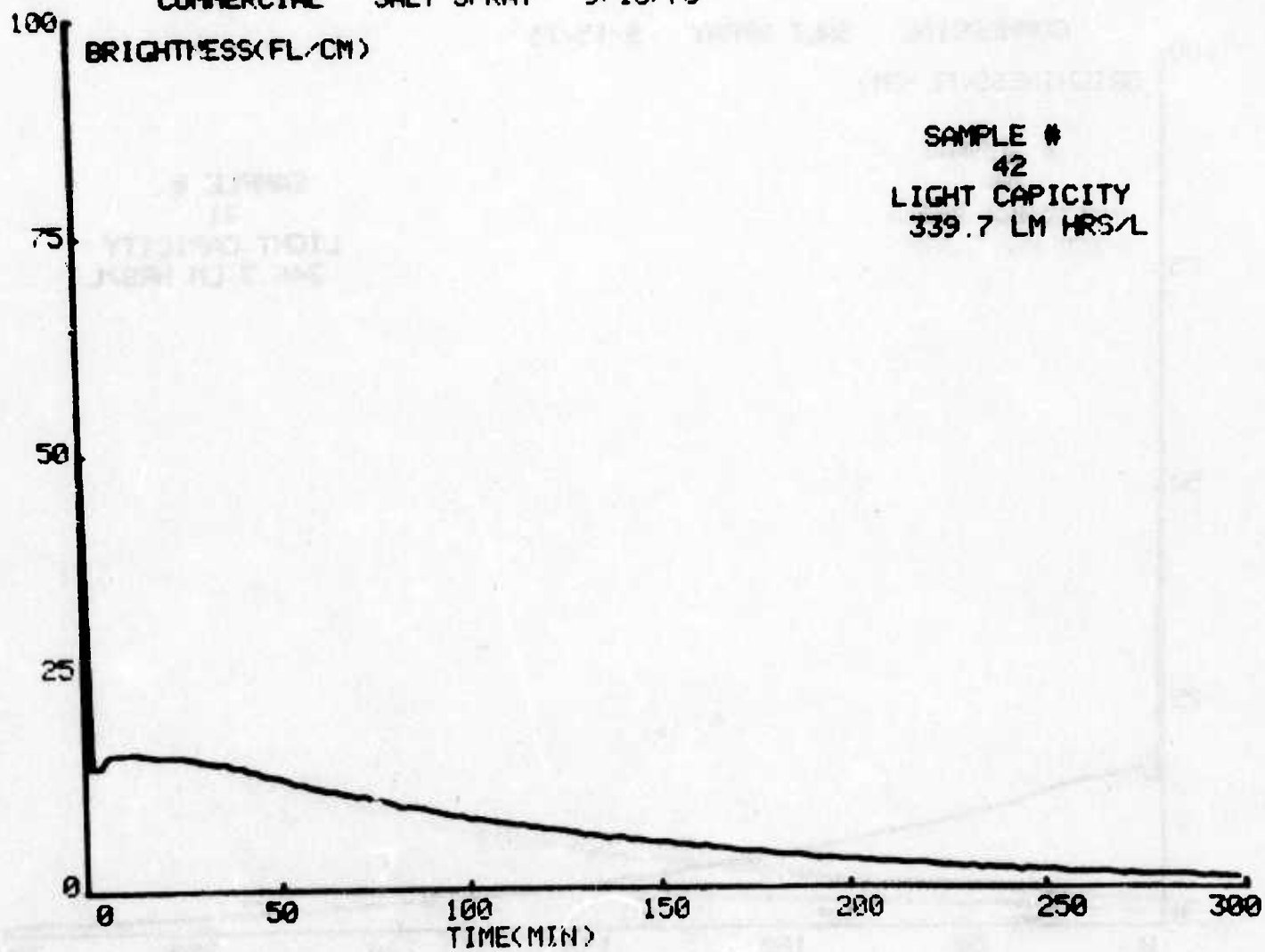




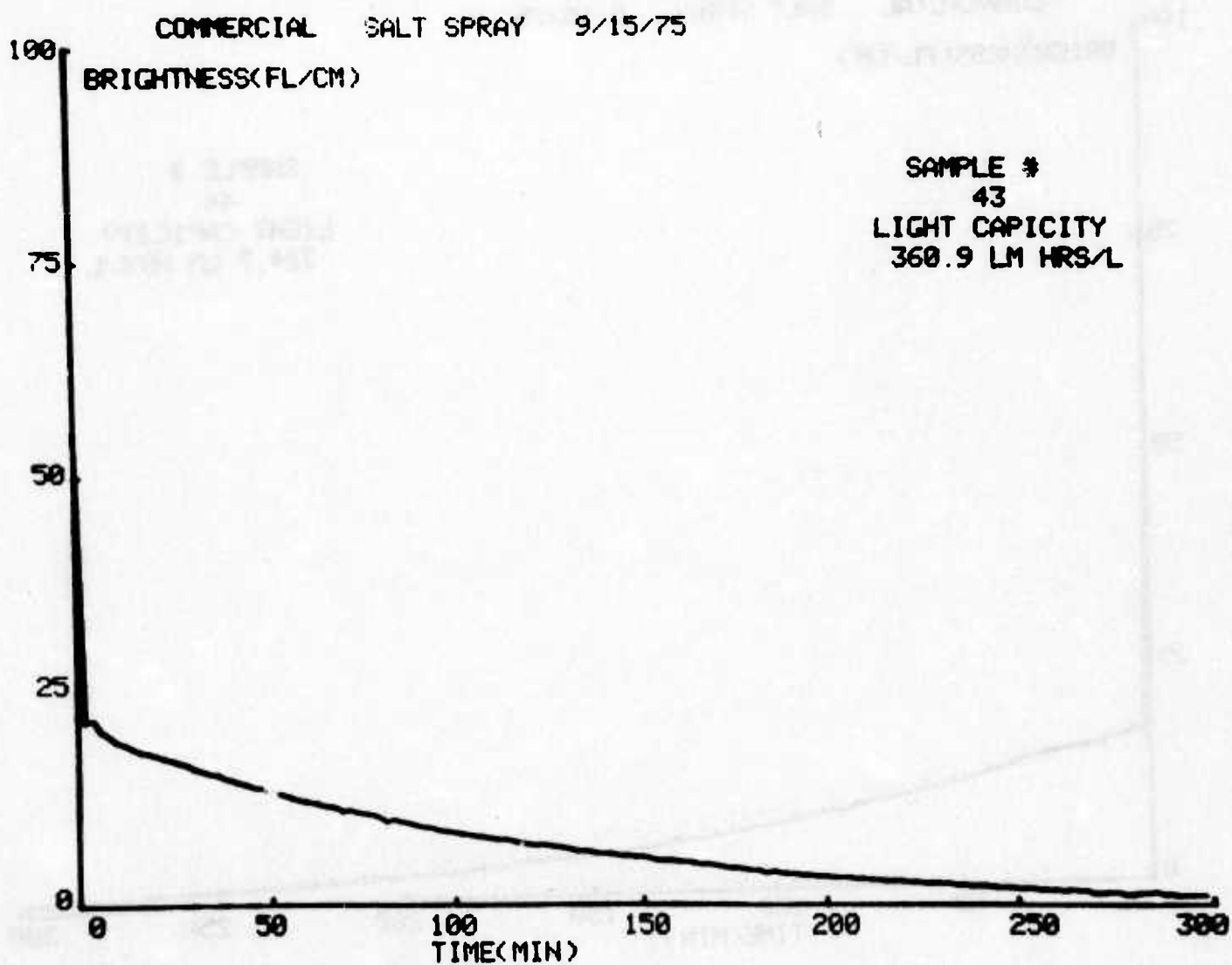


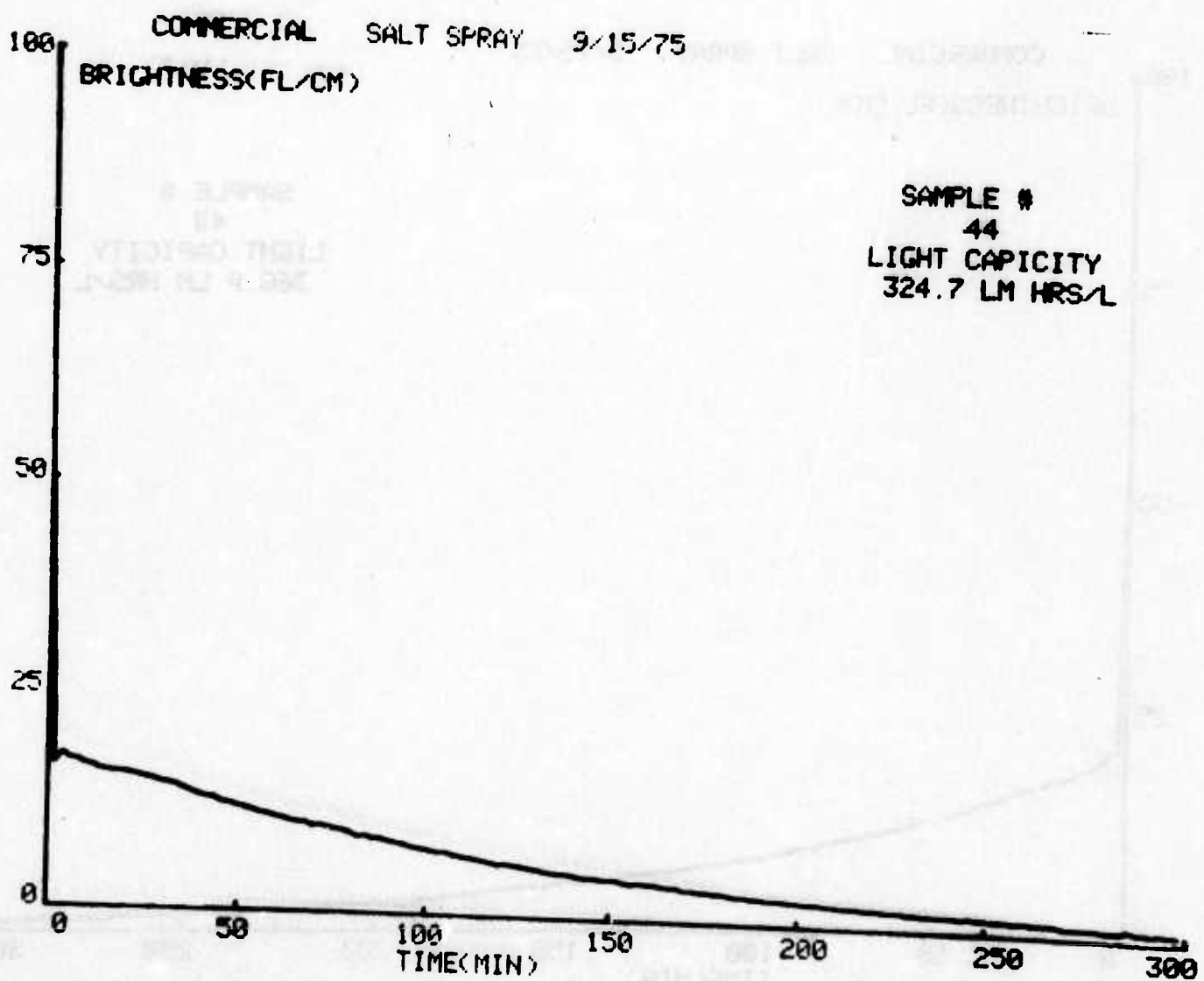


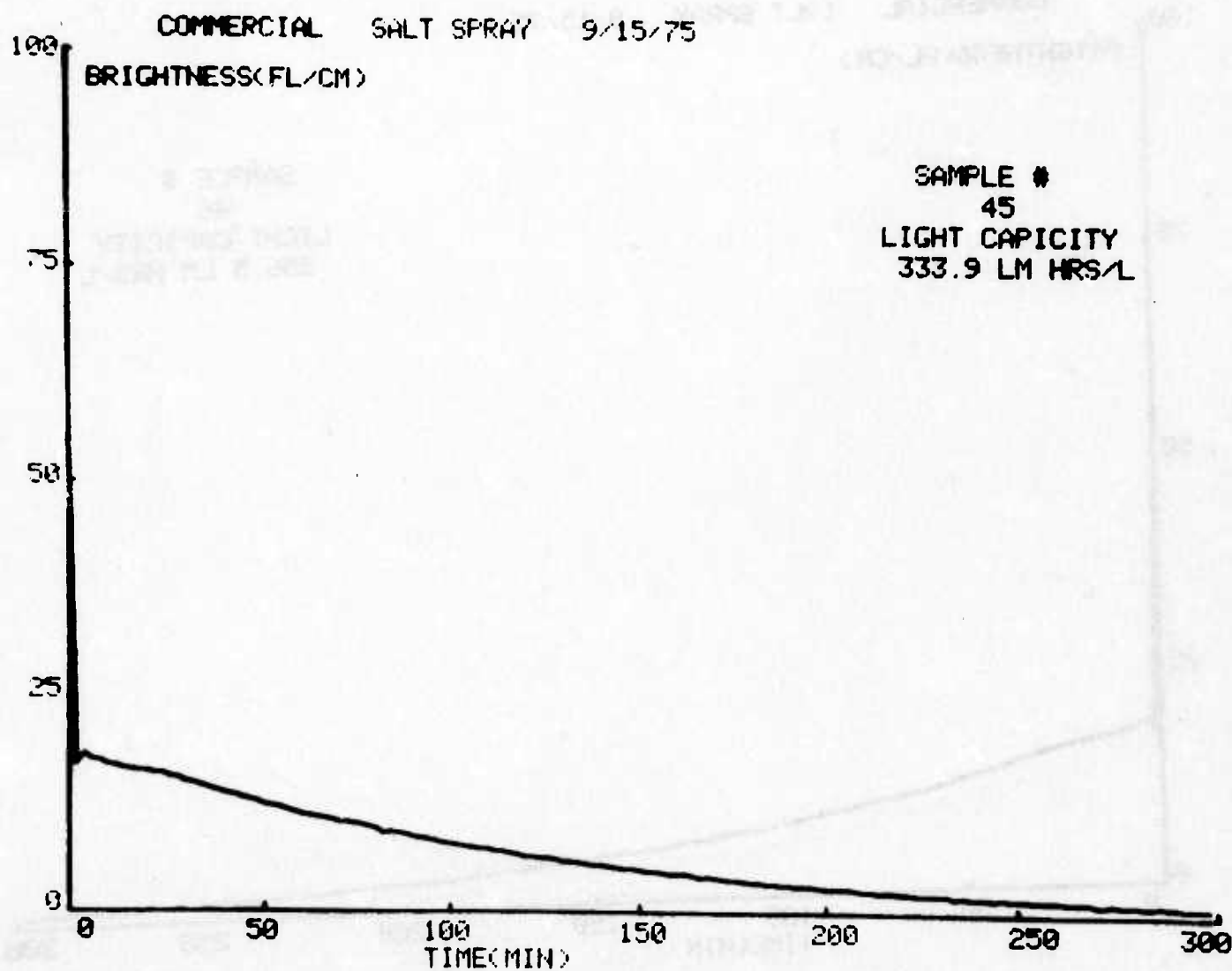
COMMERCIAL SALT SPRAY 9/15/75

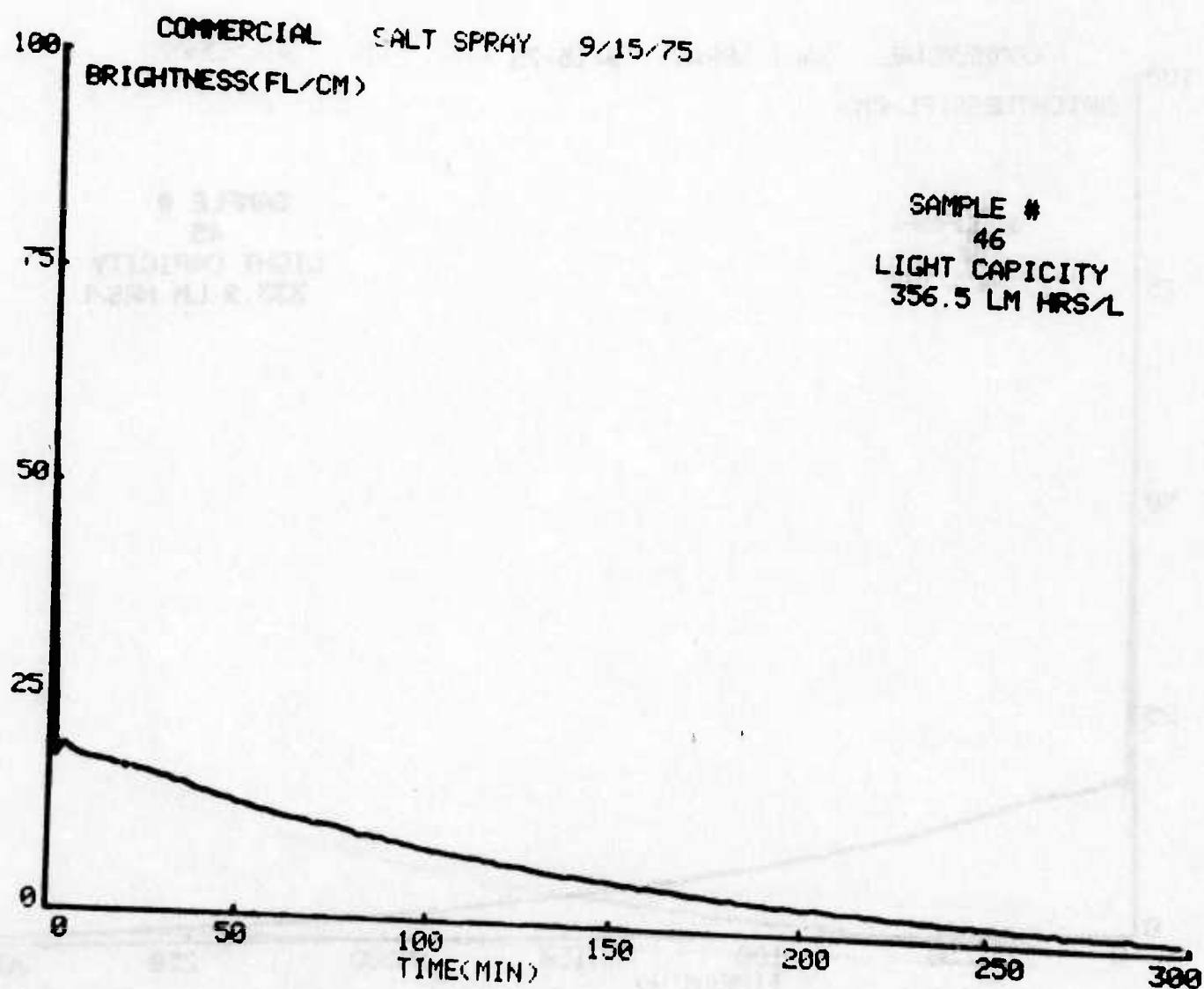


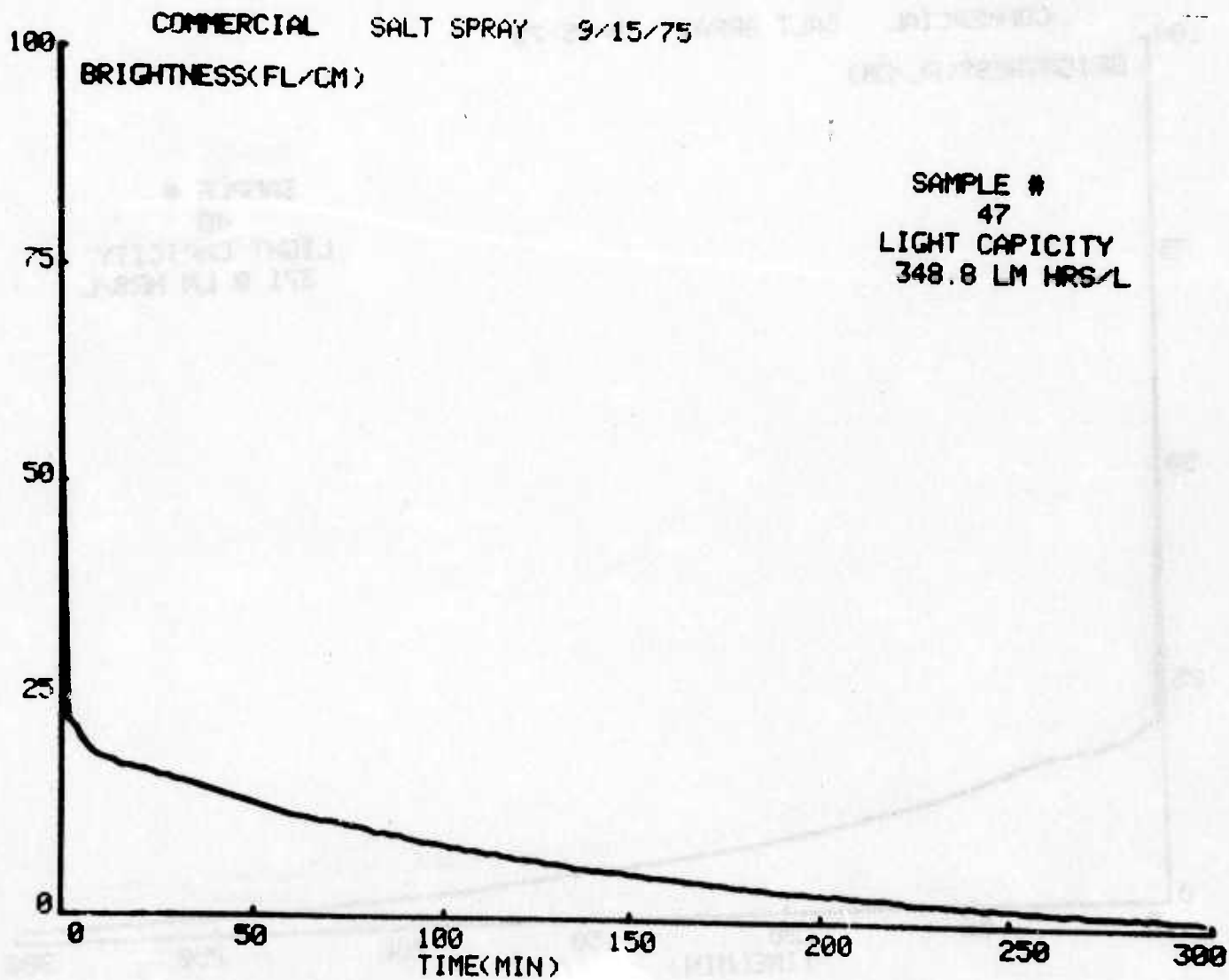


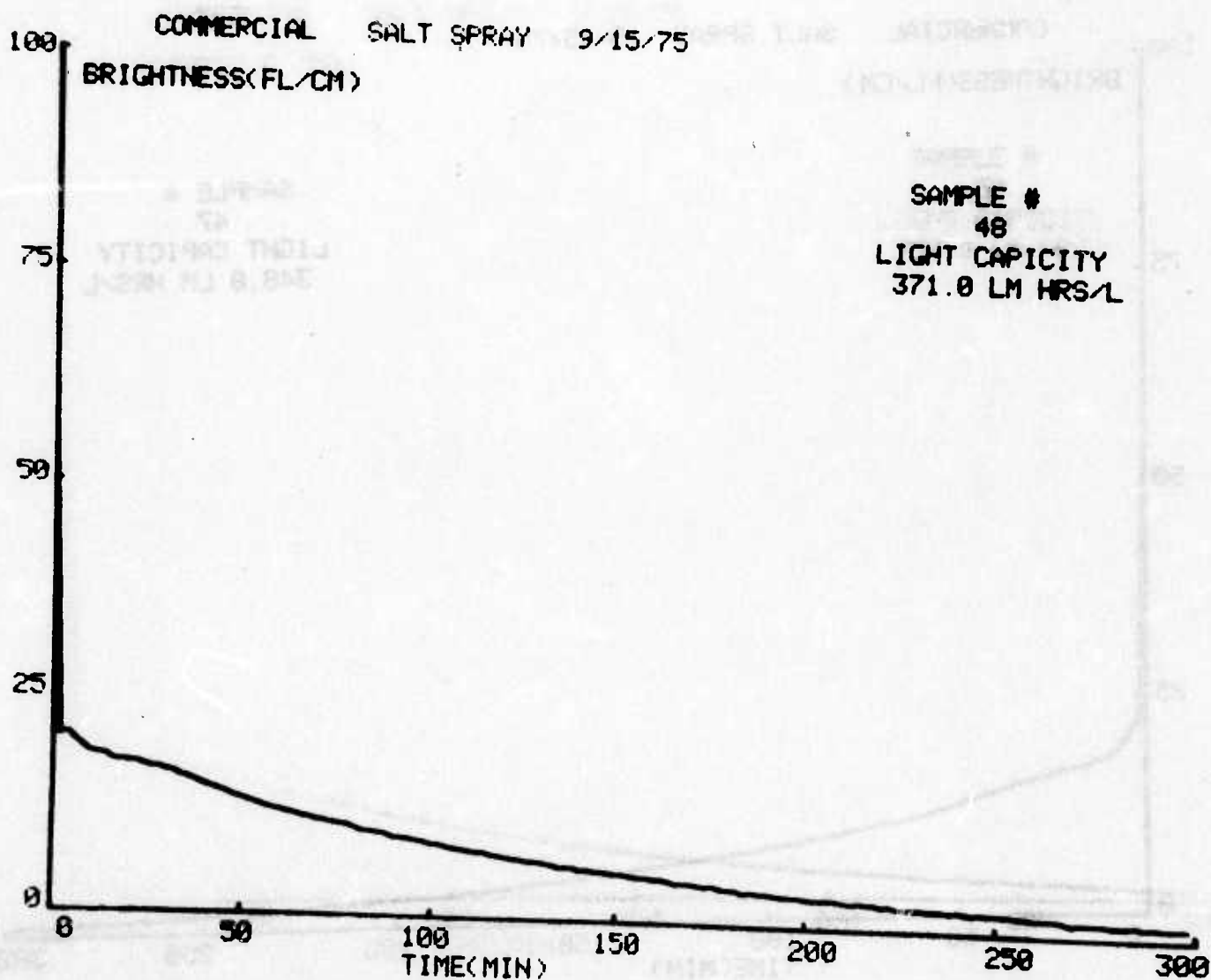


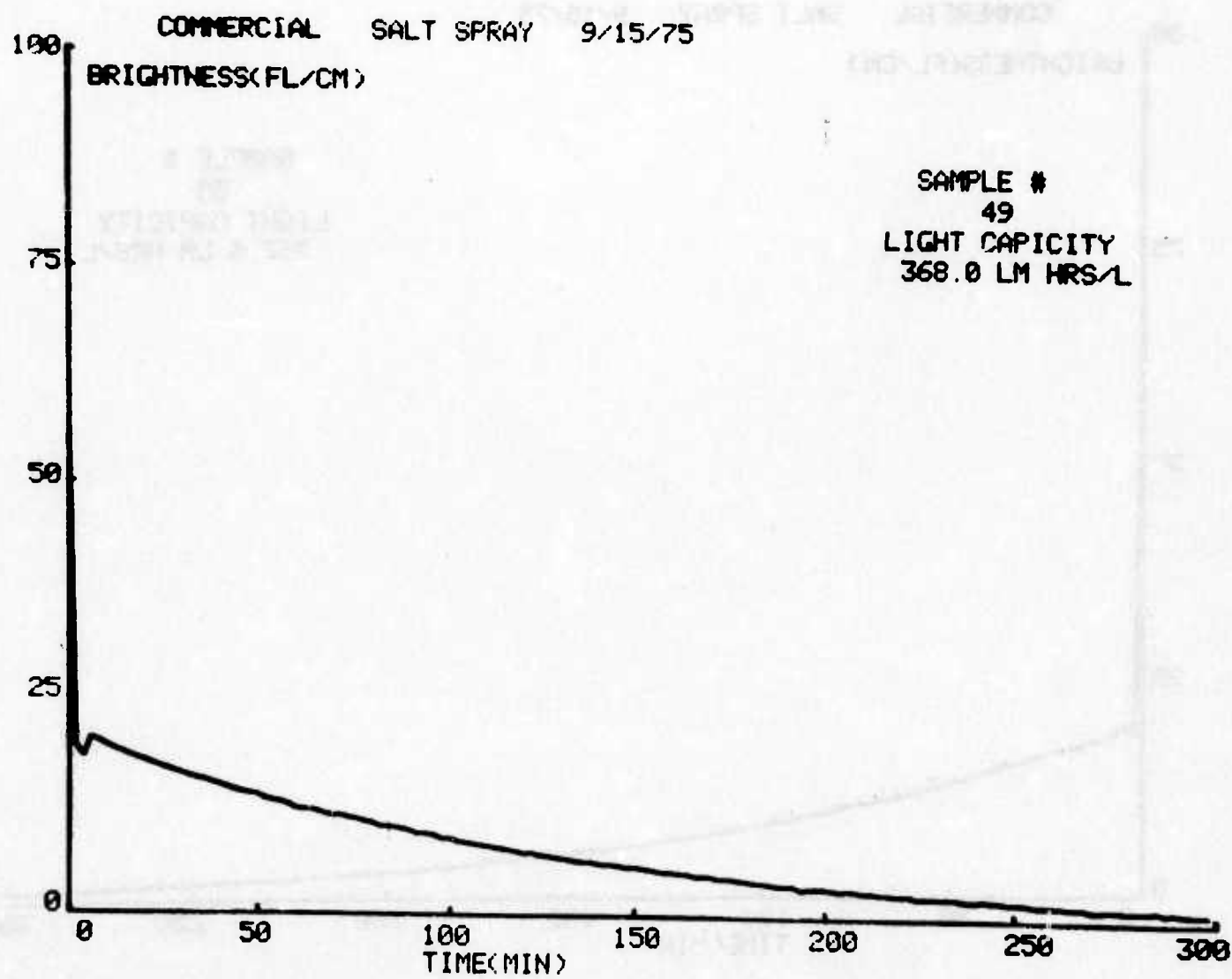






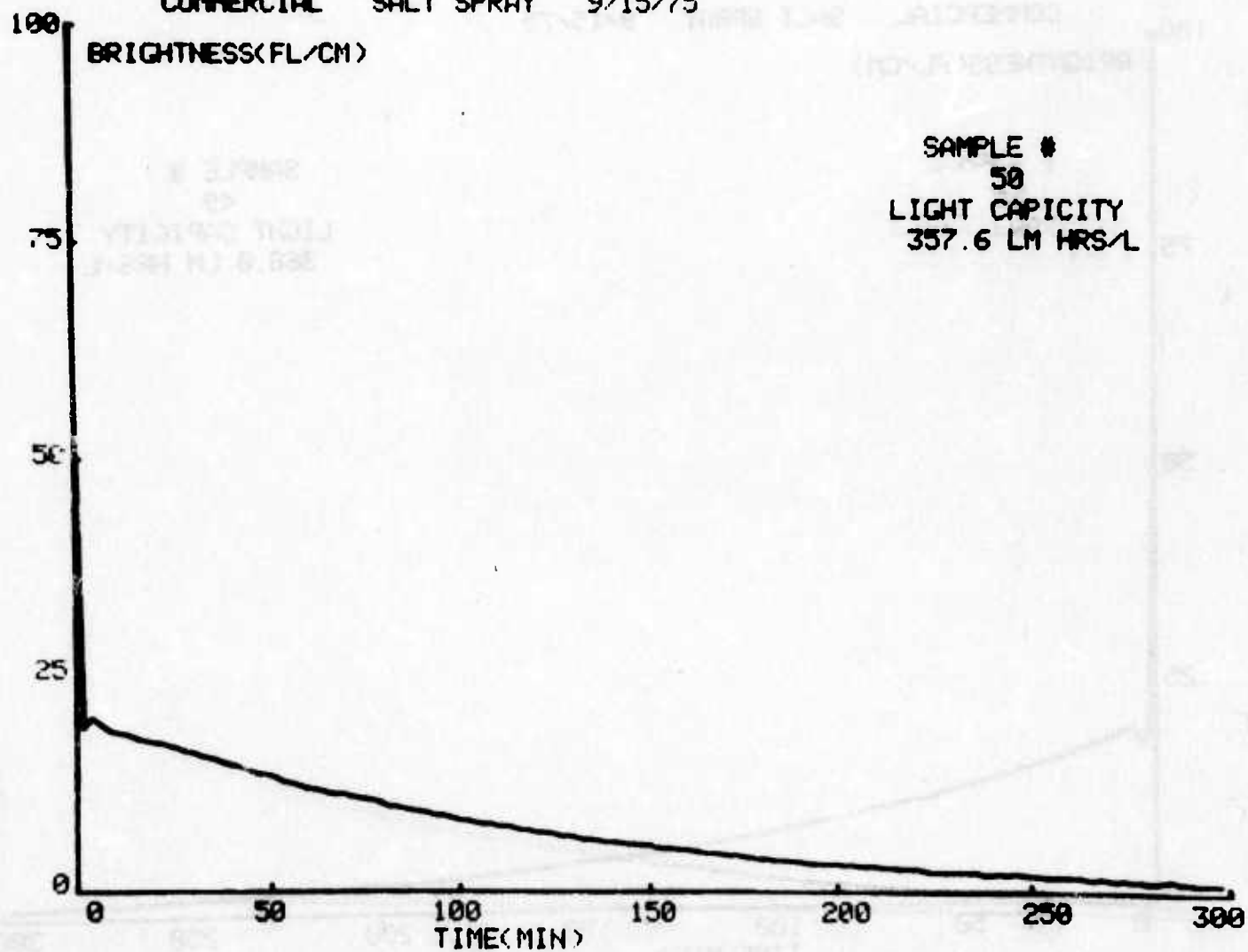




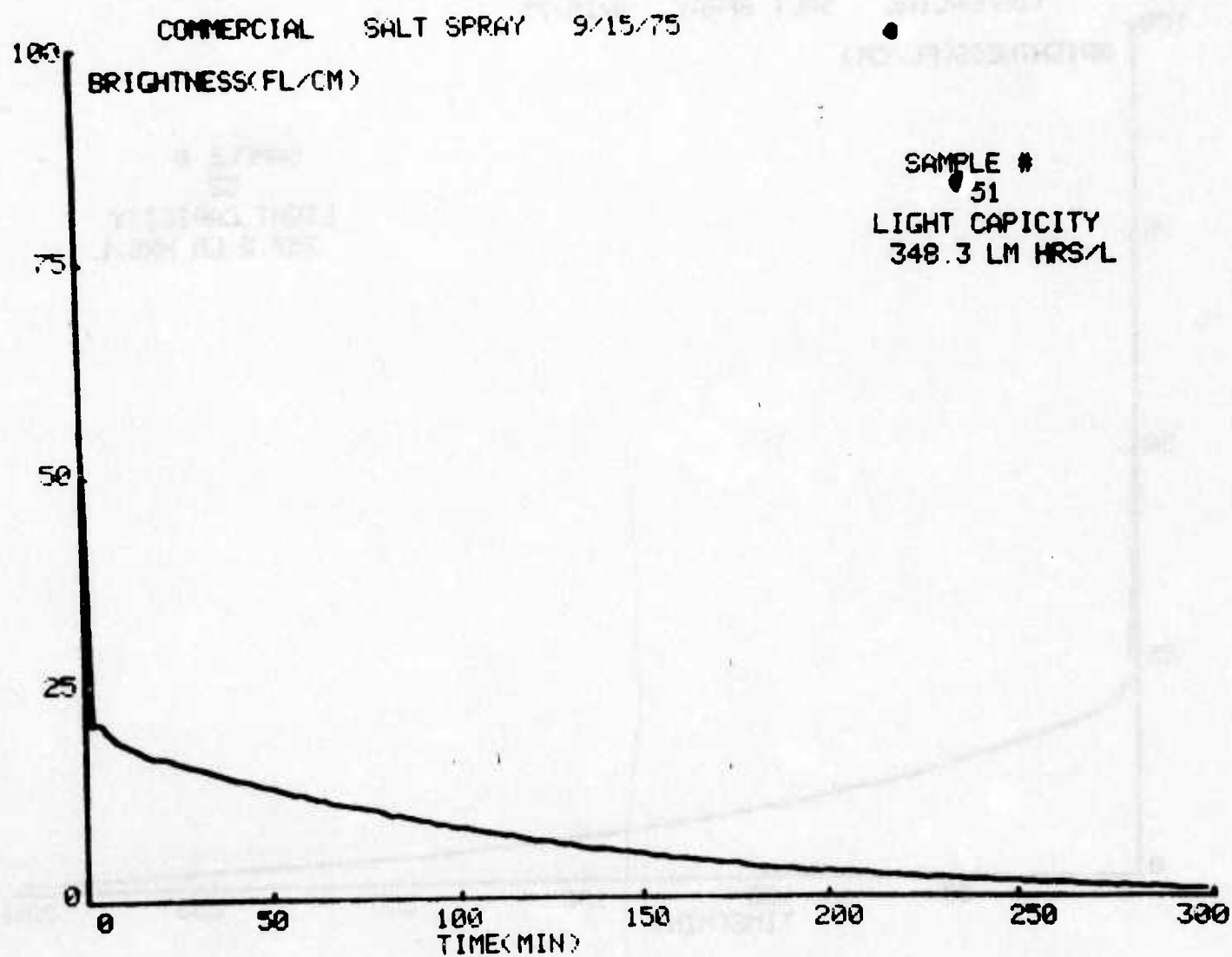




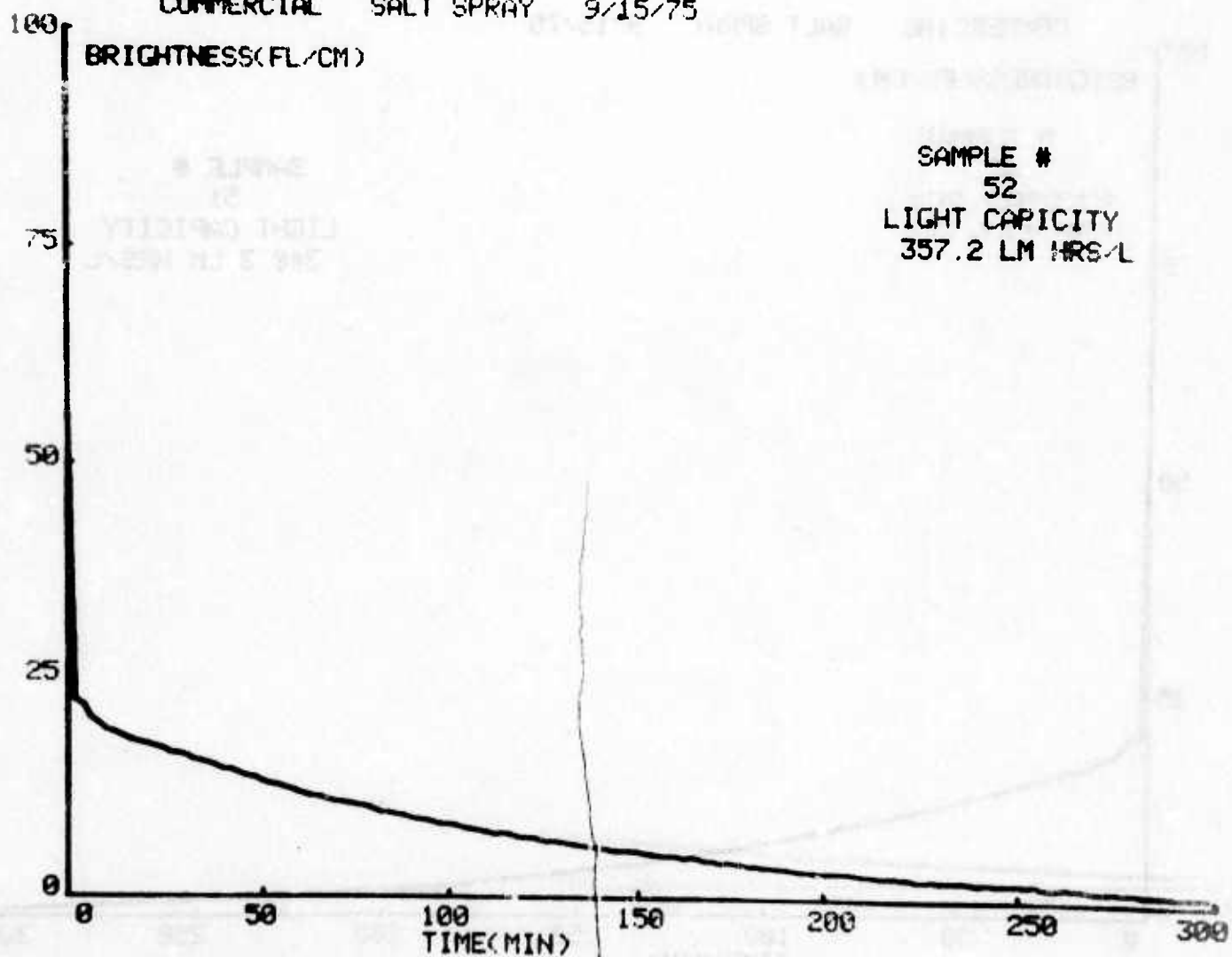
COMMERCIAL SALT SPRAY 9/15/75

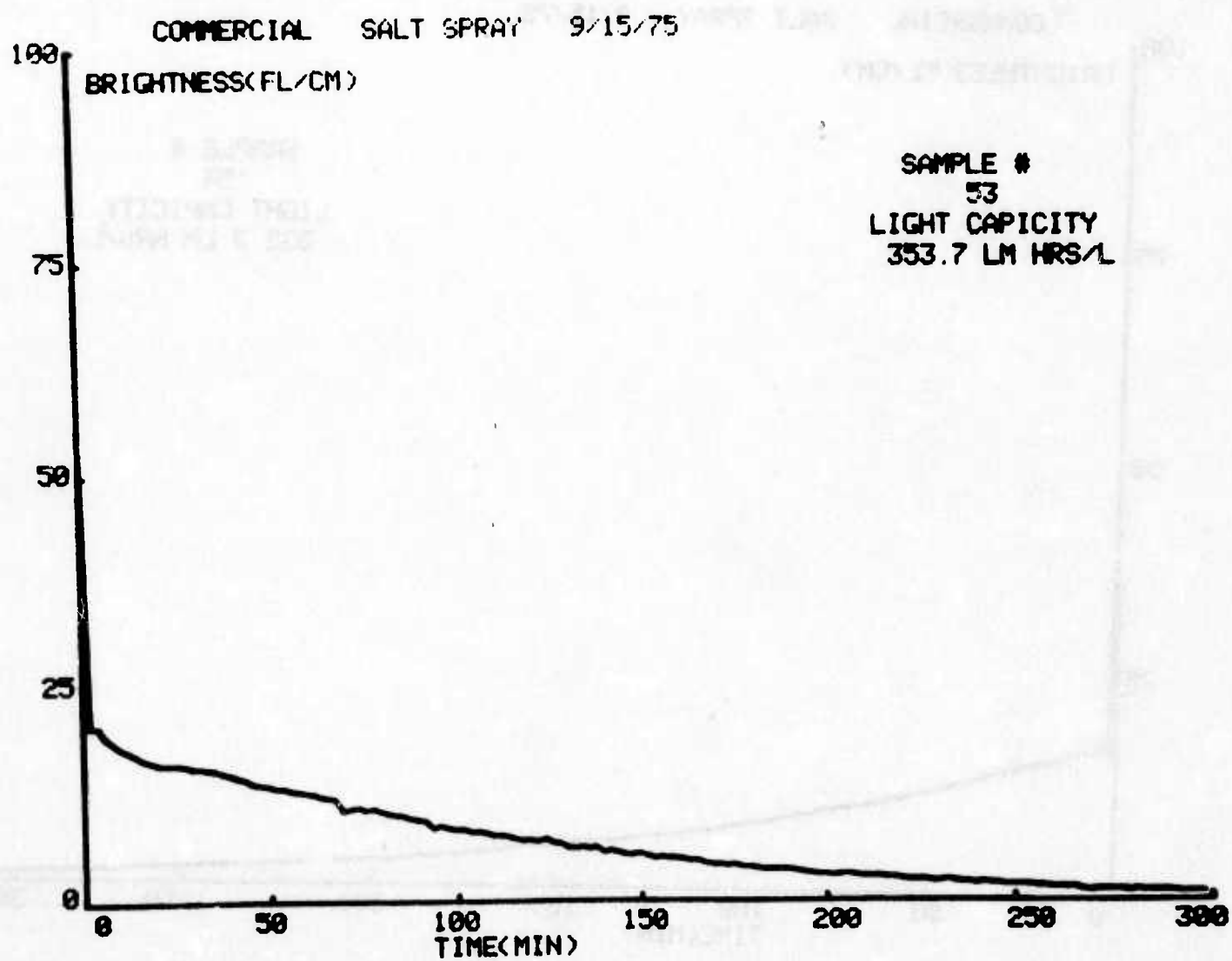




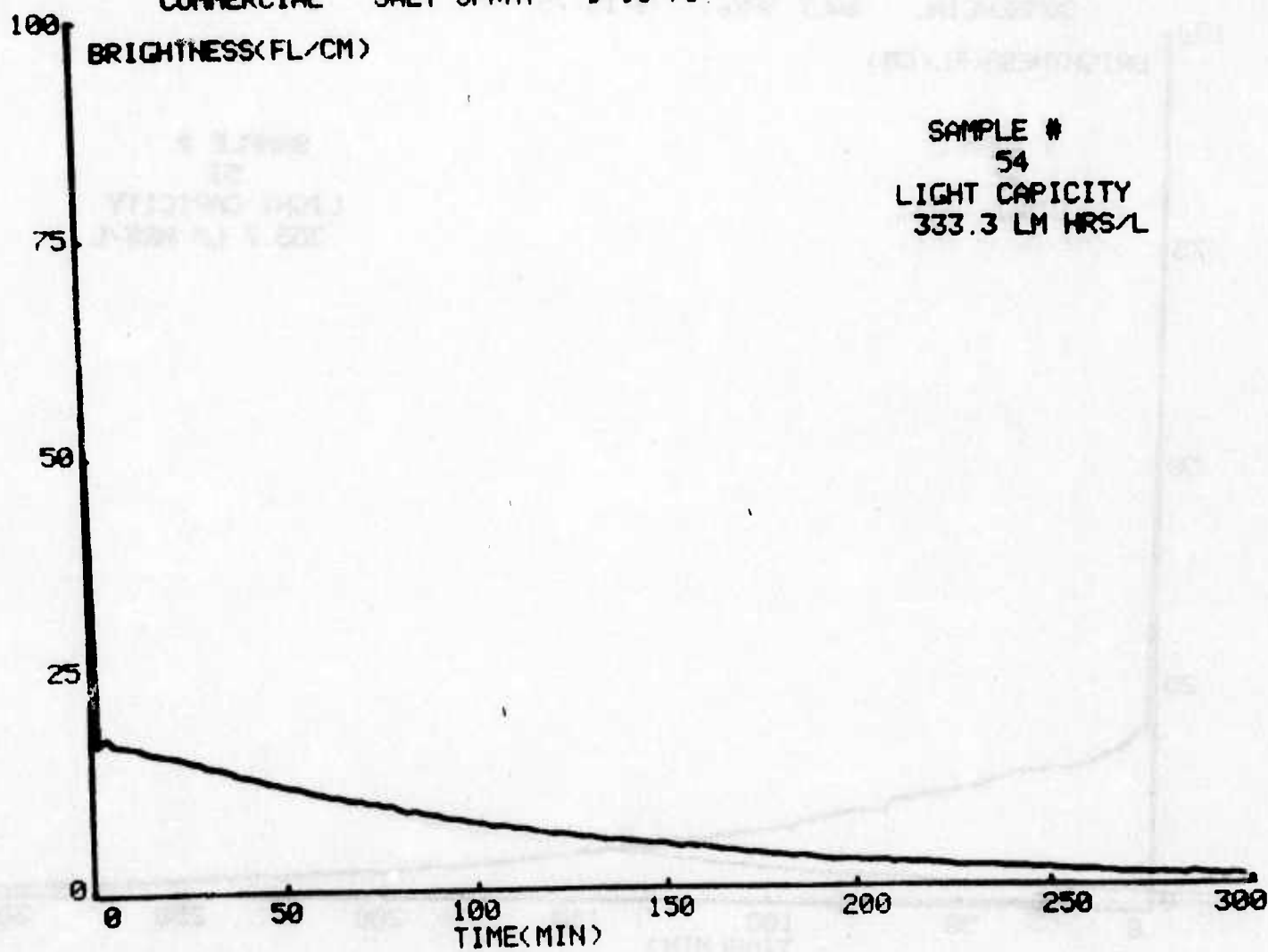


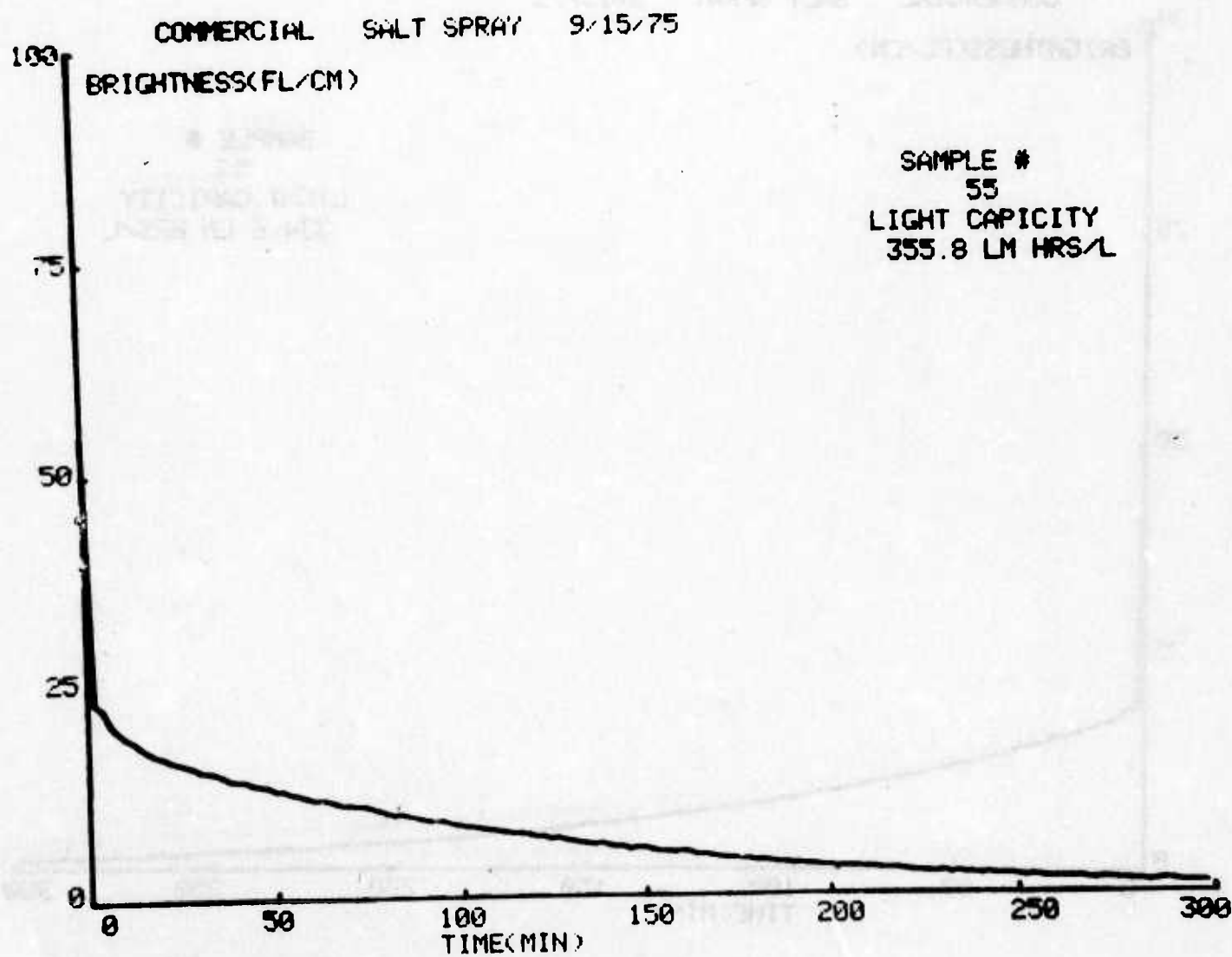
COMMERCIAL SALT SPRAY 9/15/75

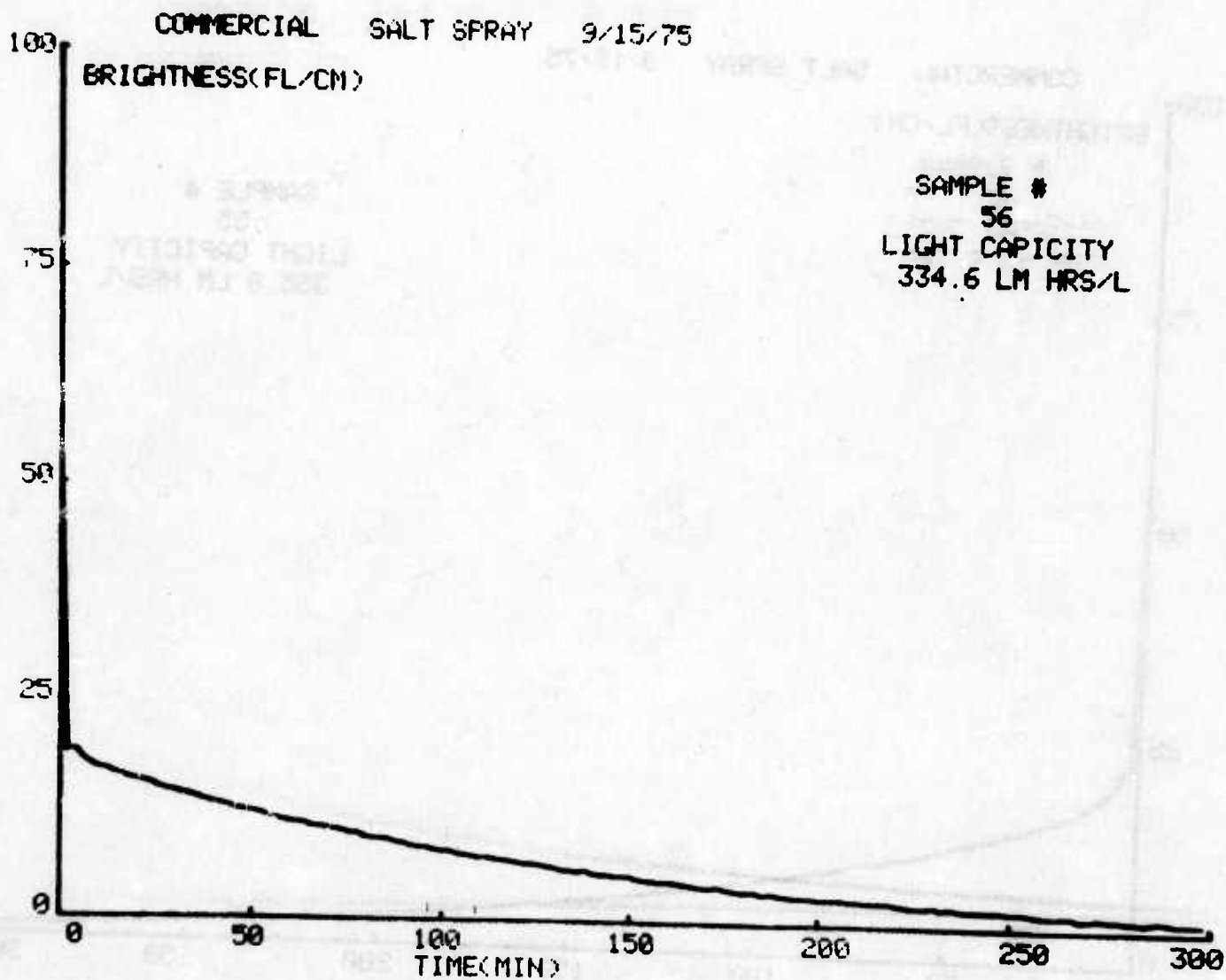


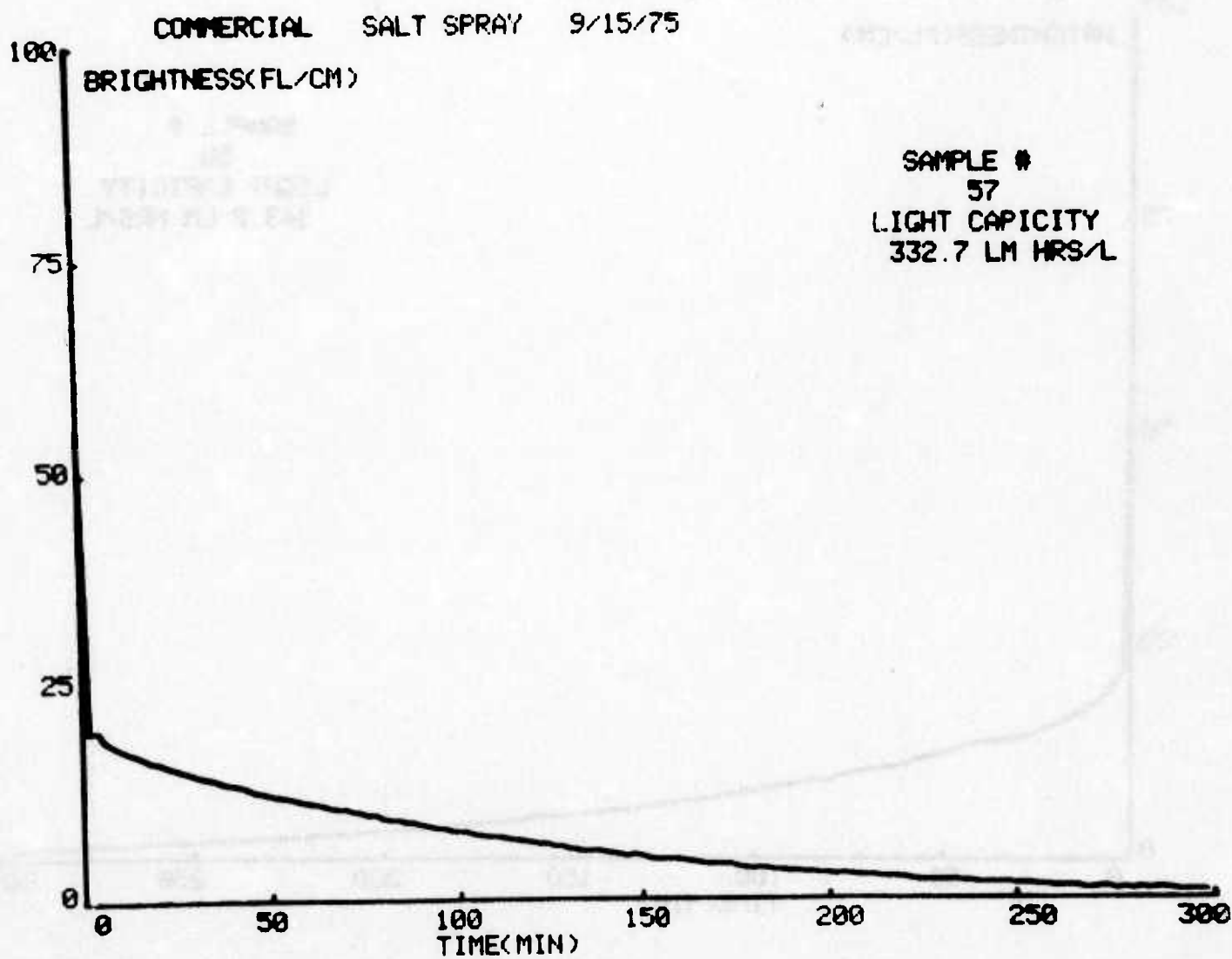


COMMERCIAL SALT SPRAY 9/15/75



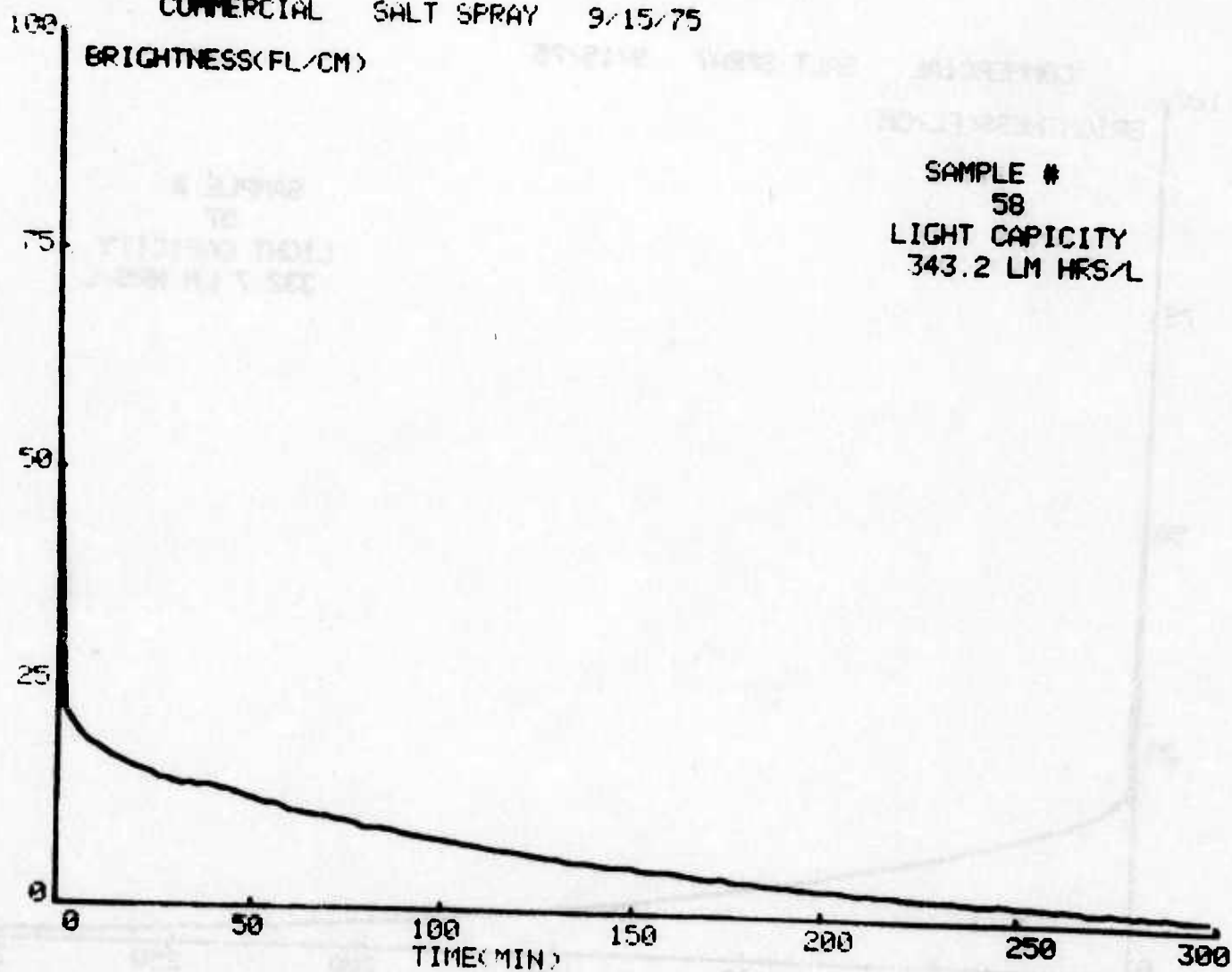




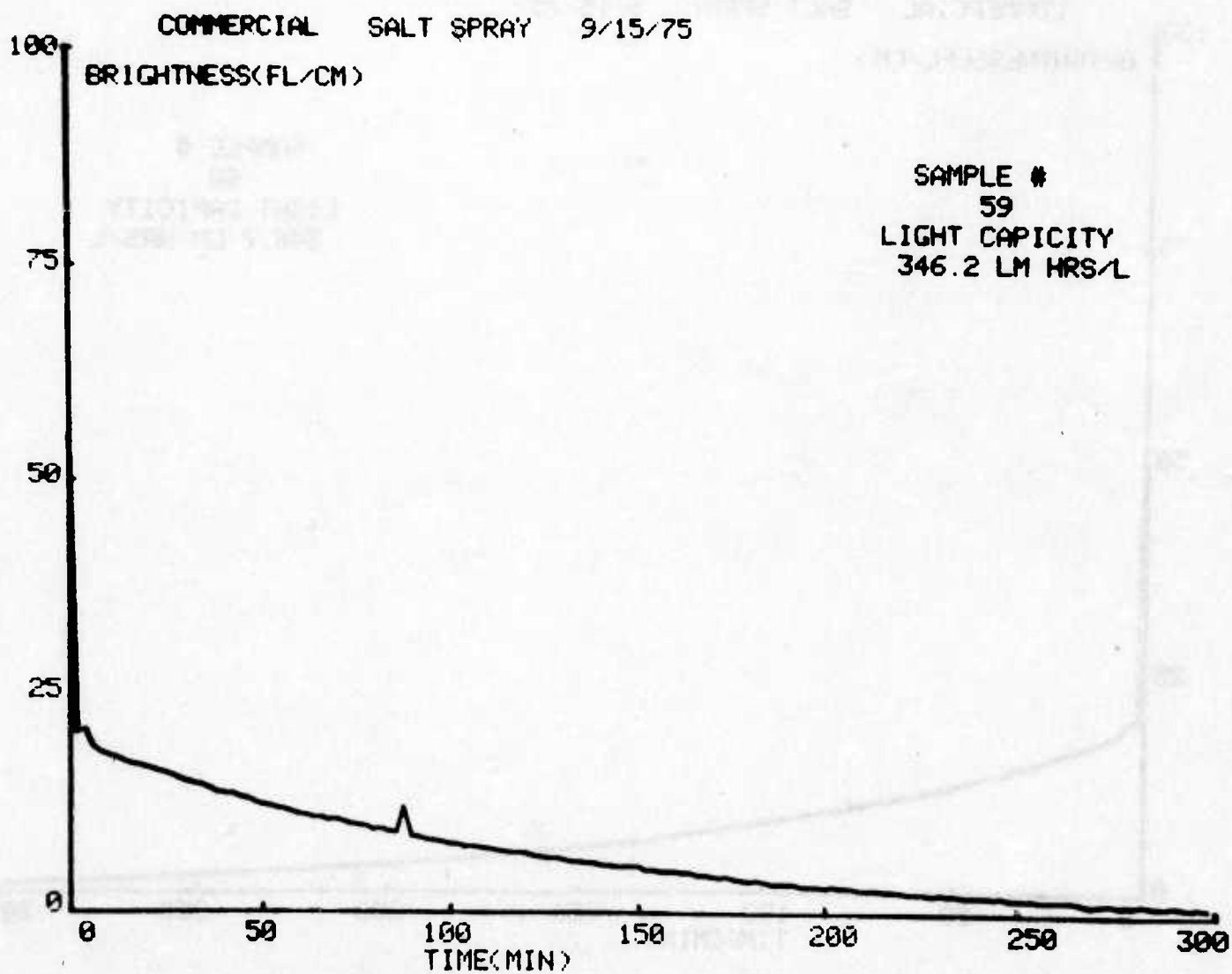




COMMERCIAL SALT SPRAY 9/15/75



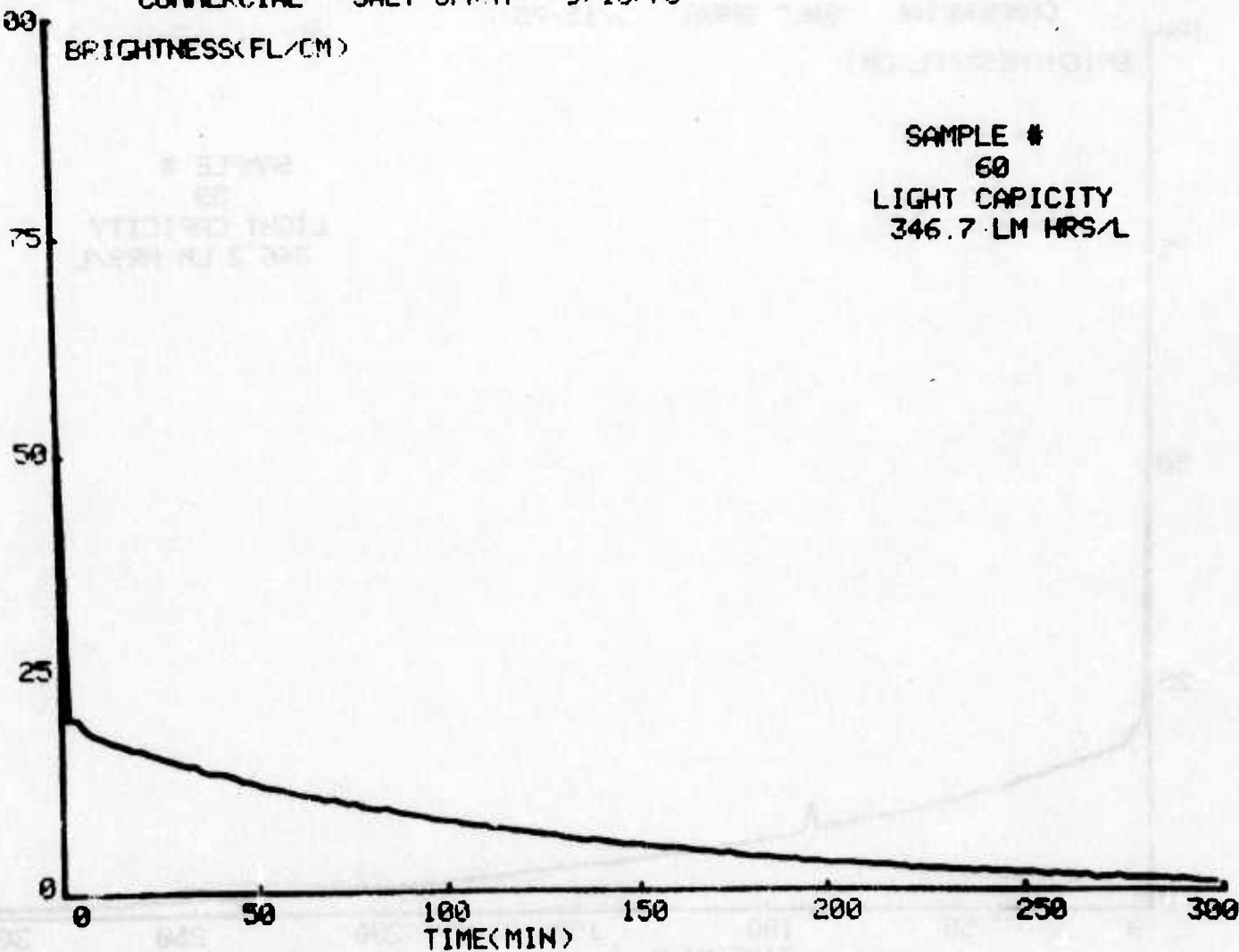


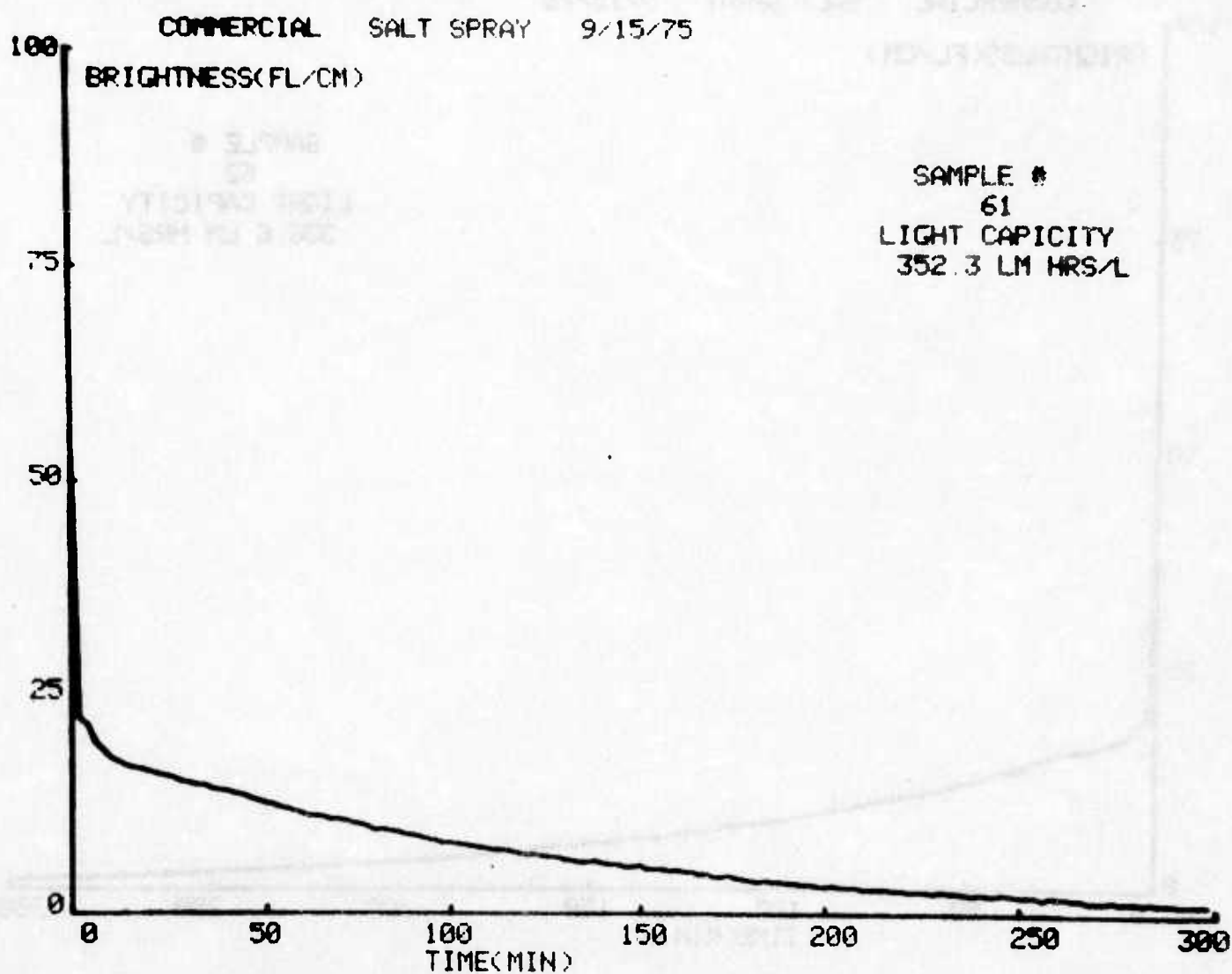


COMMERCIAL SALT SPRAY 9/15/75

BRIGHTNESS(FL/CM)

SAMPLE #  
60  
LIGHT CAPACITY  
346.7 LM HRS/L

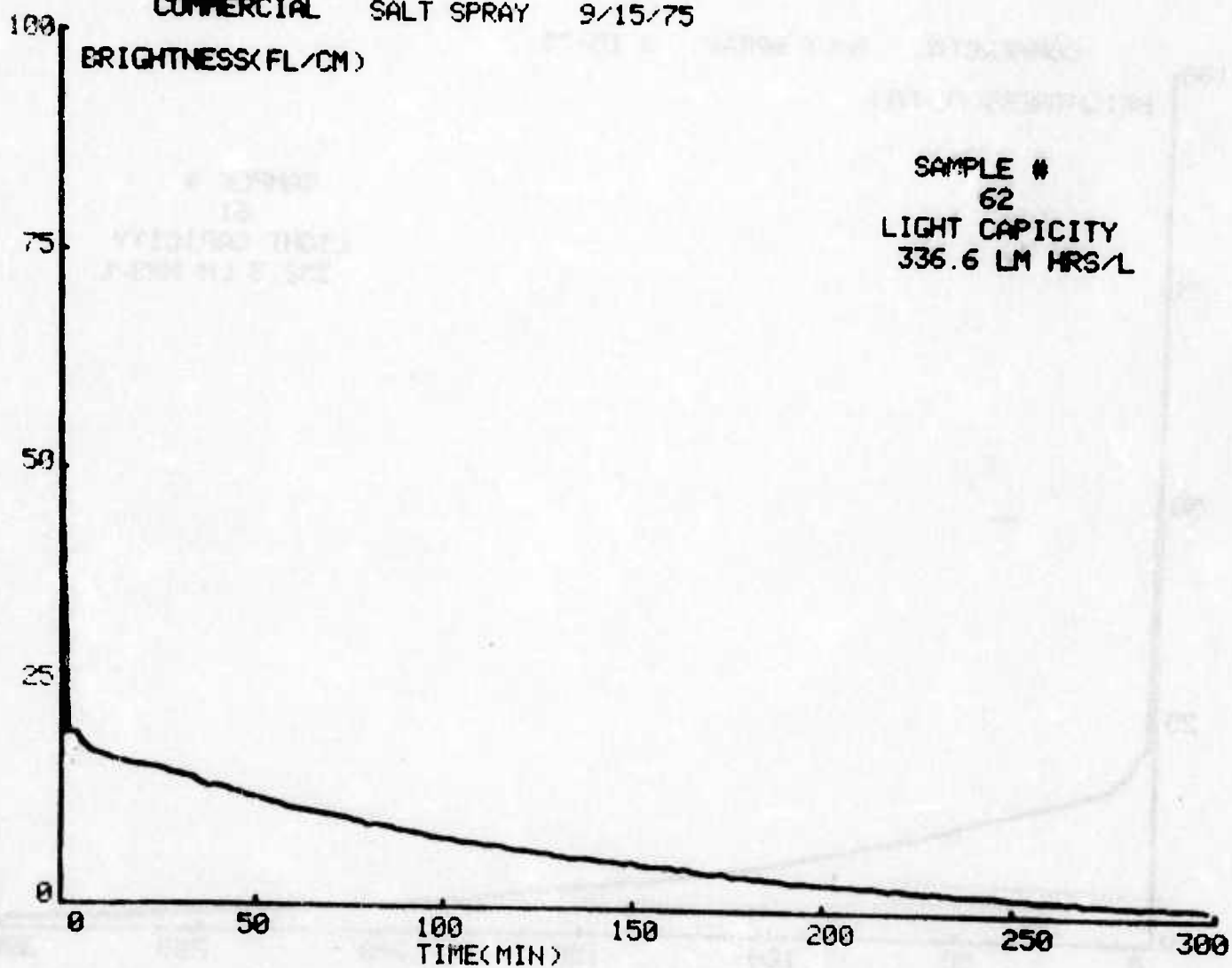


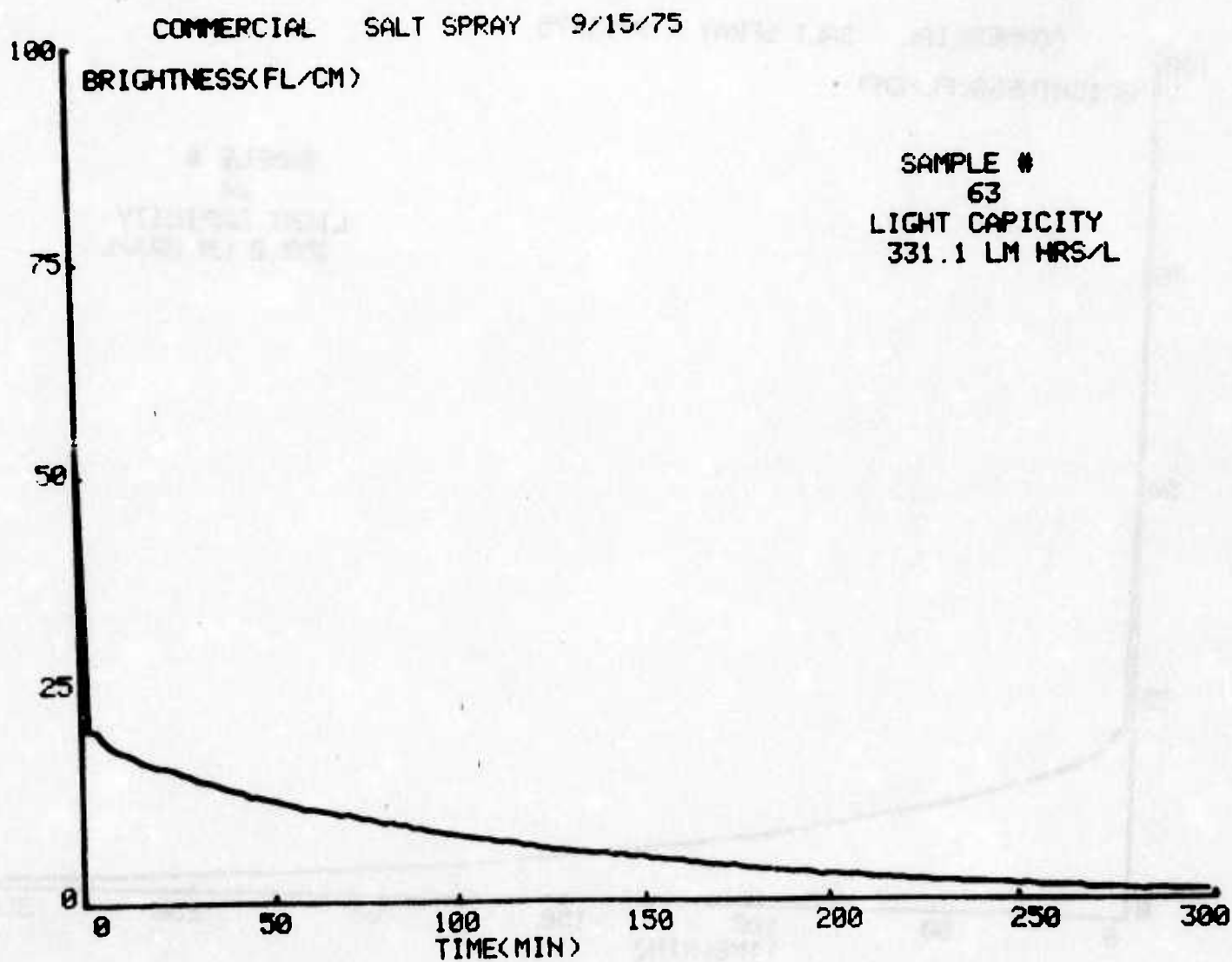


COMMERCIAL SALT SPRAY 9/15/75

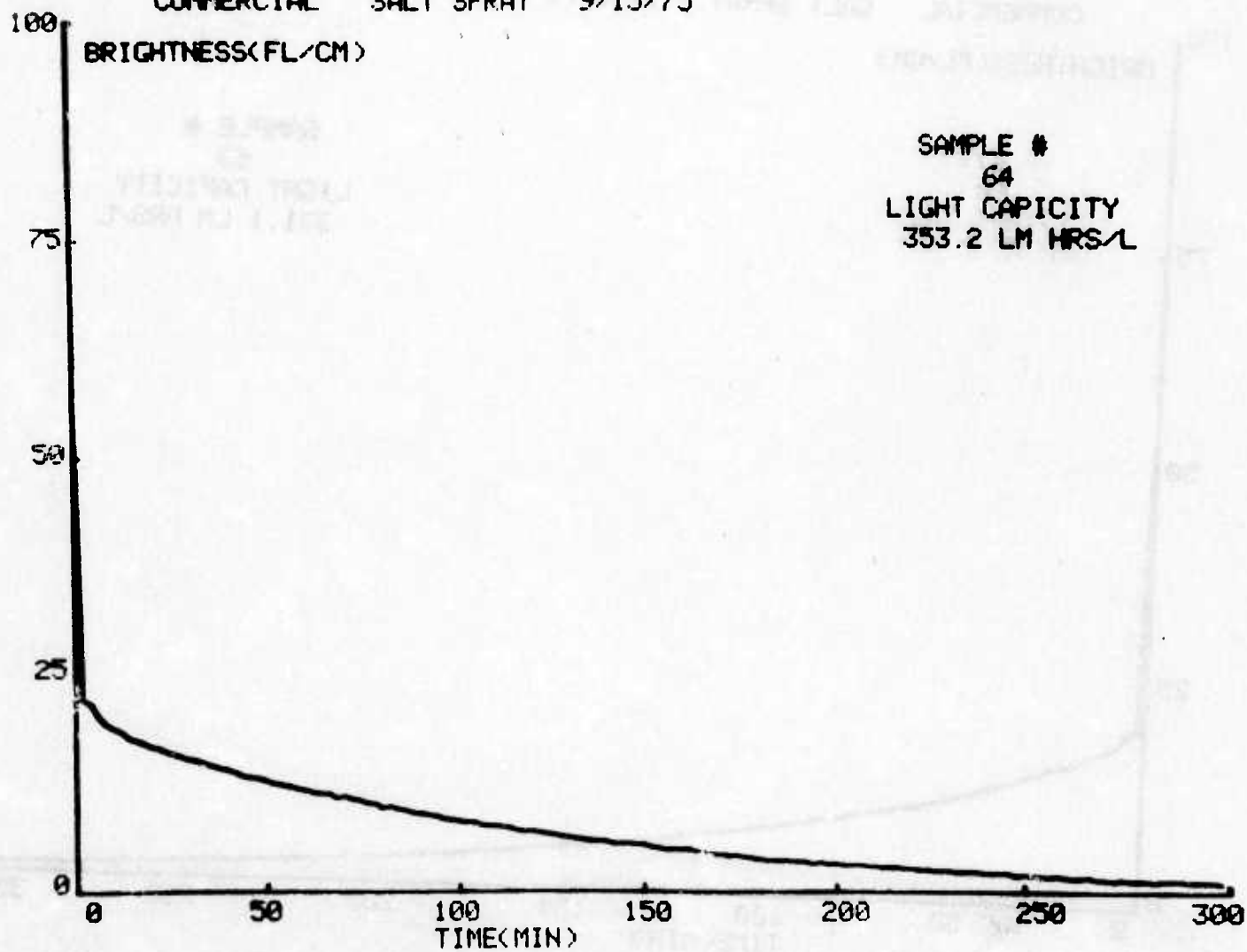
BRIGHTNESS(FL/CM)

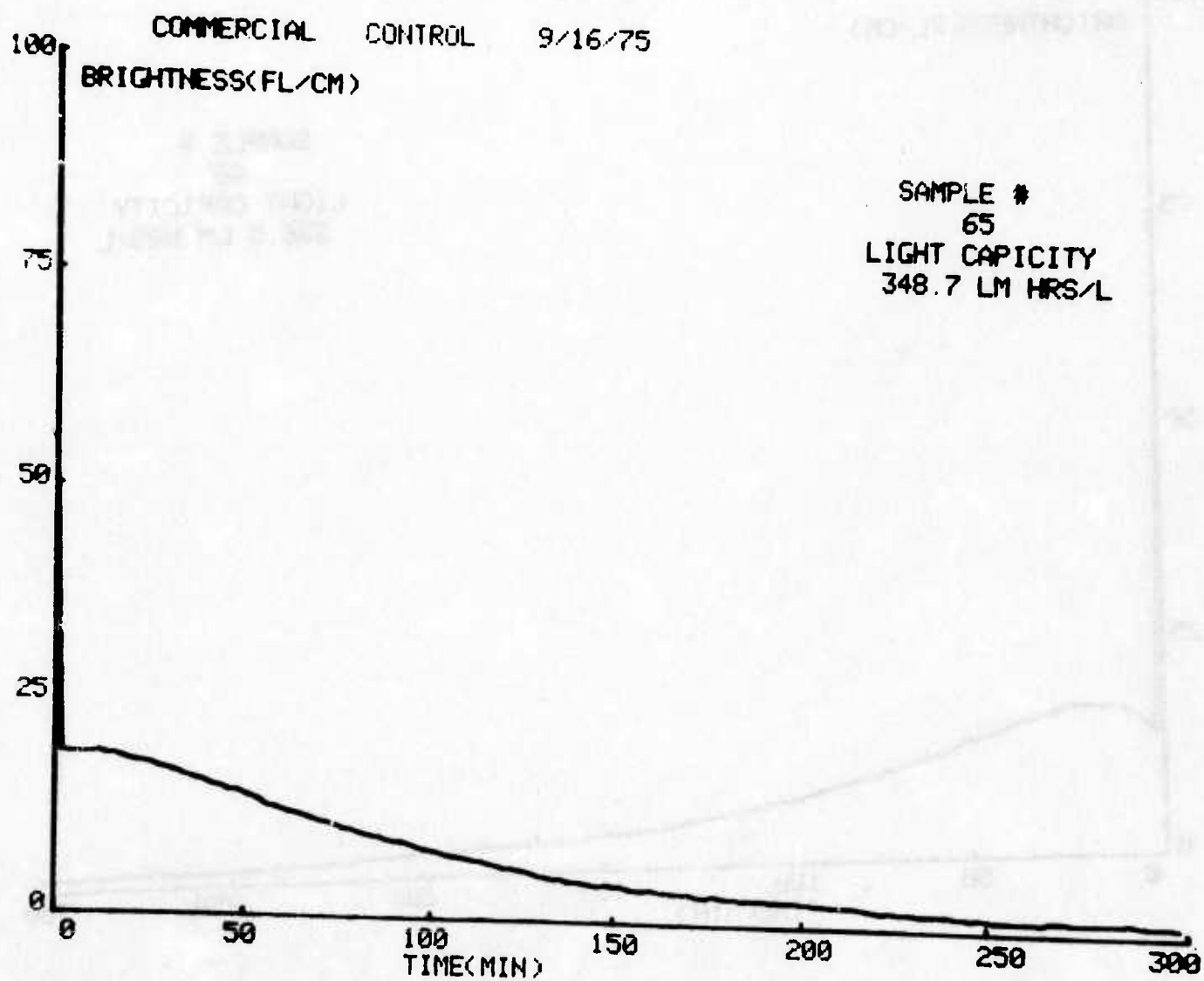
SAMPLE #  
62  
LIGHT CAPACITY  
336.6 LM HRS/L



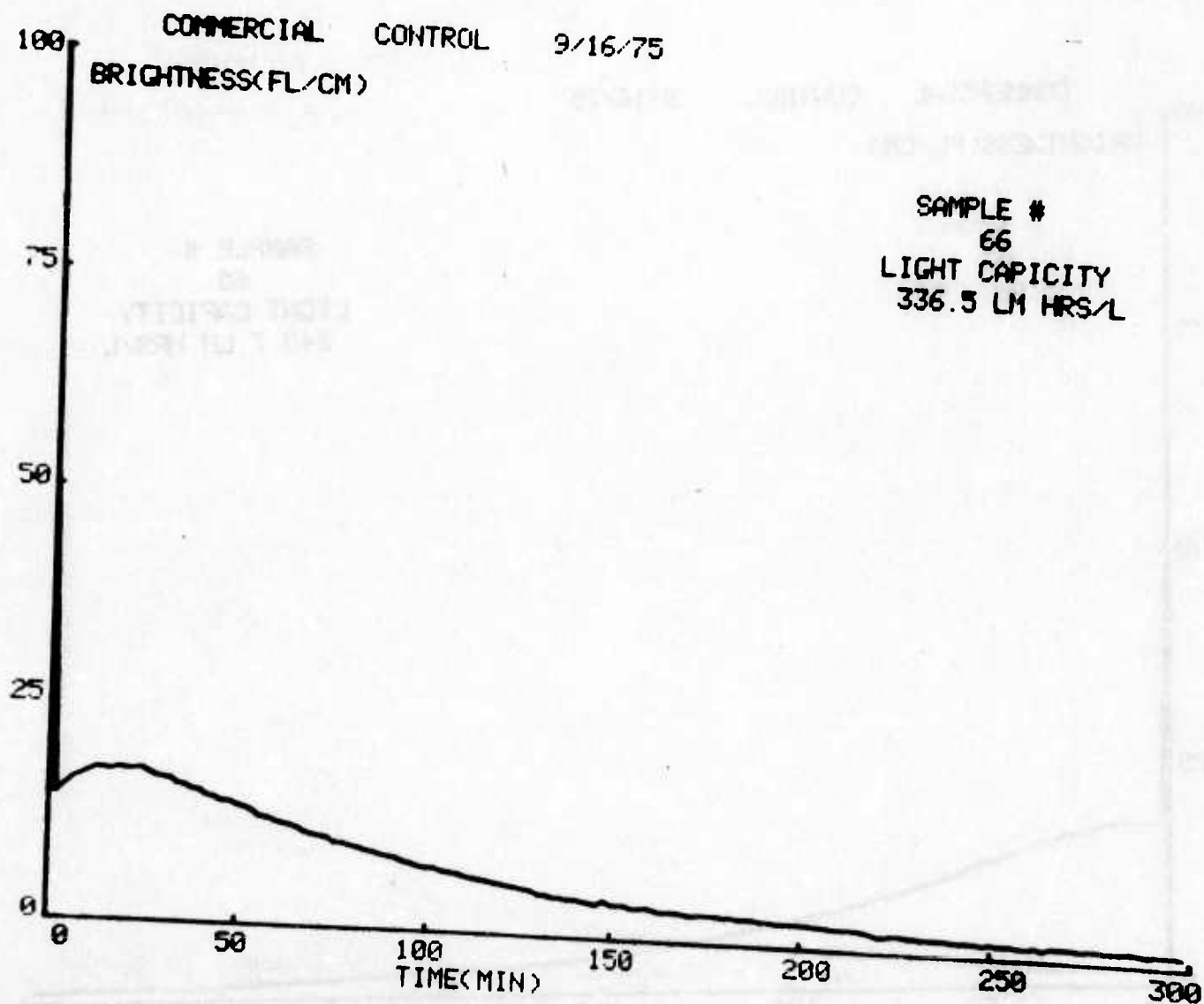


COMMERCIAL SALT SPRAY 9/15/75

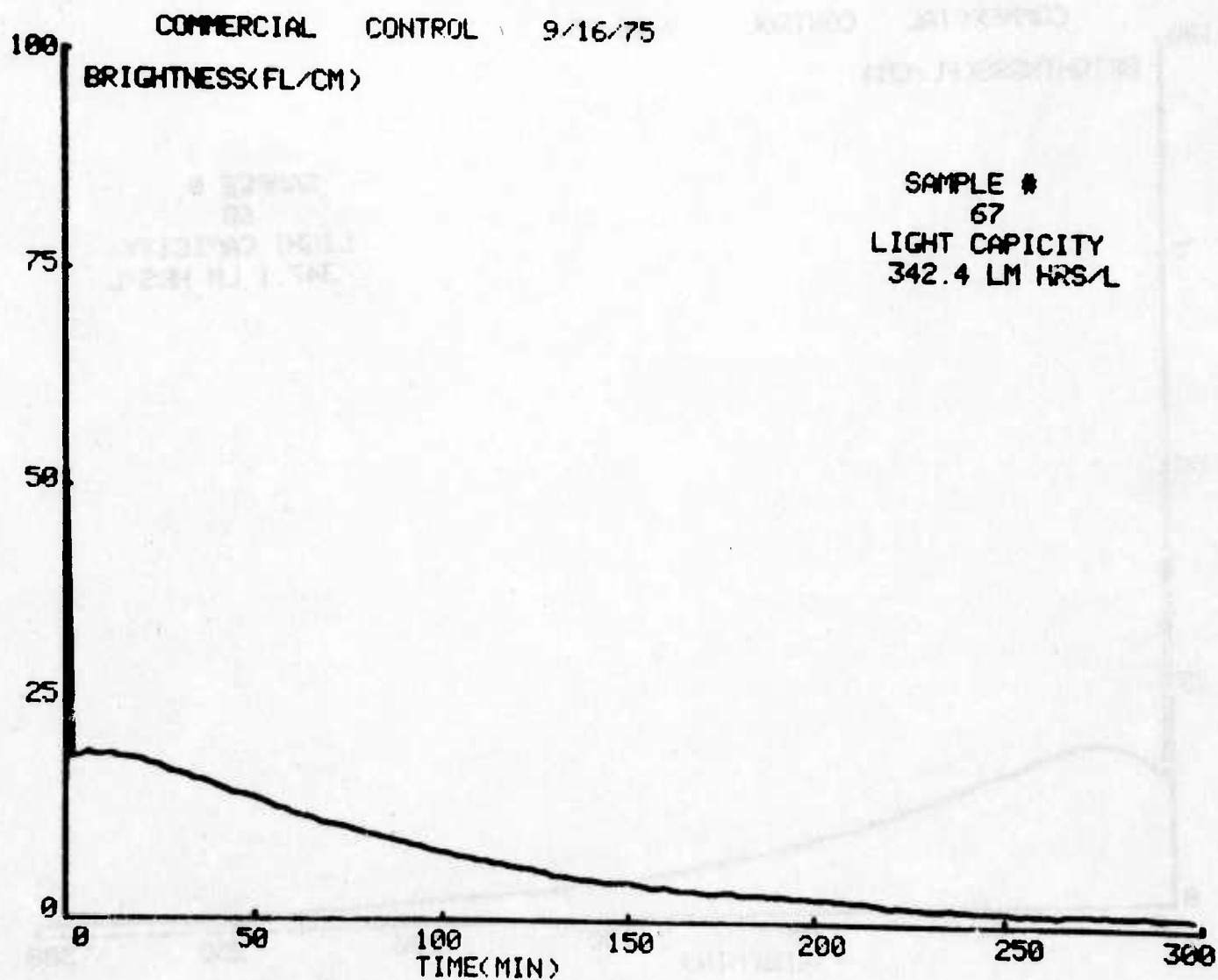


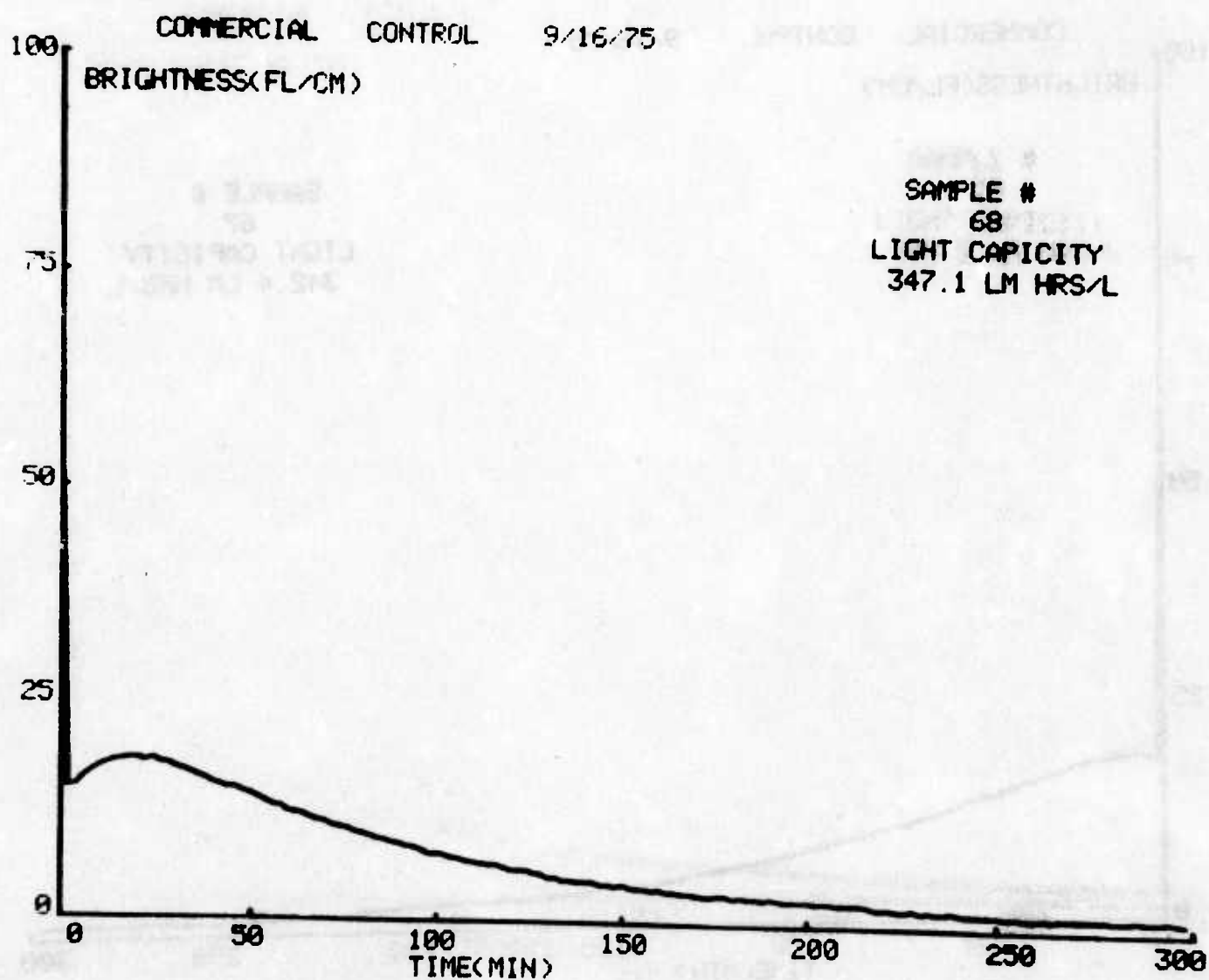


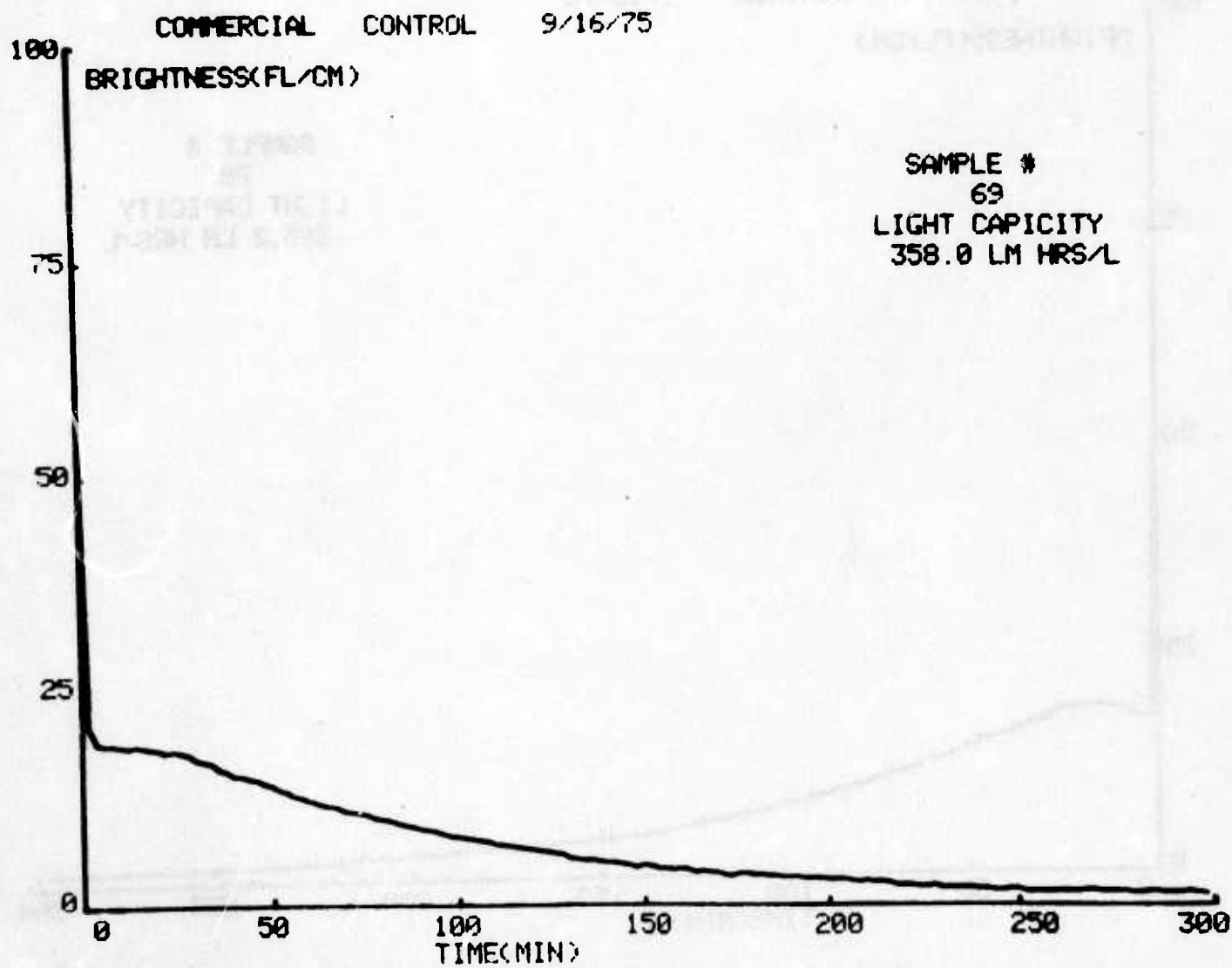


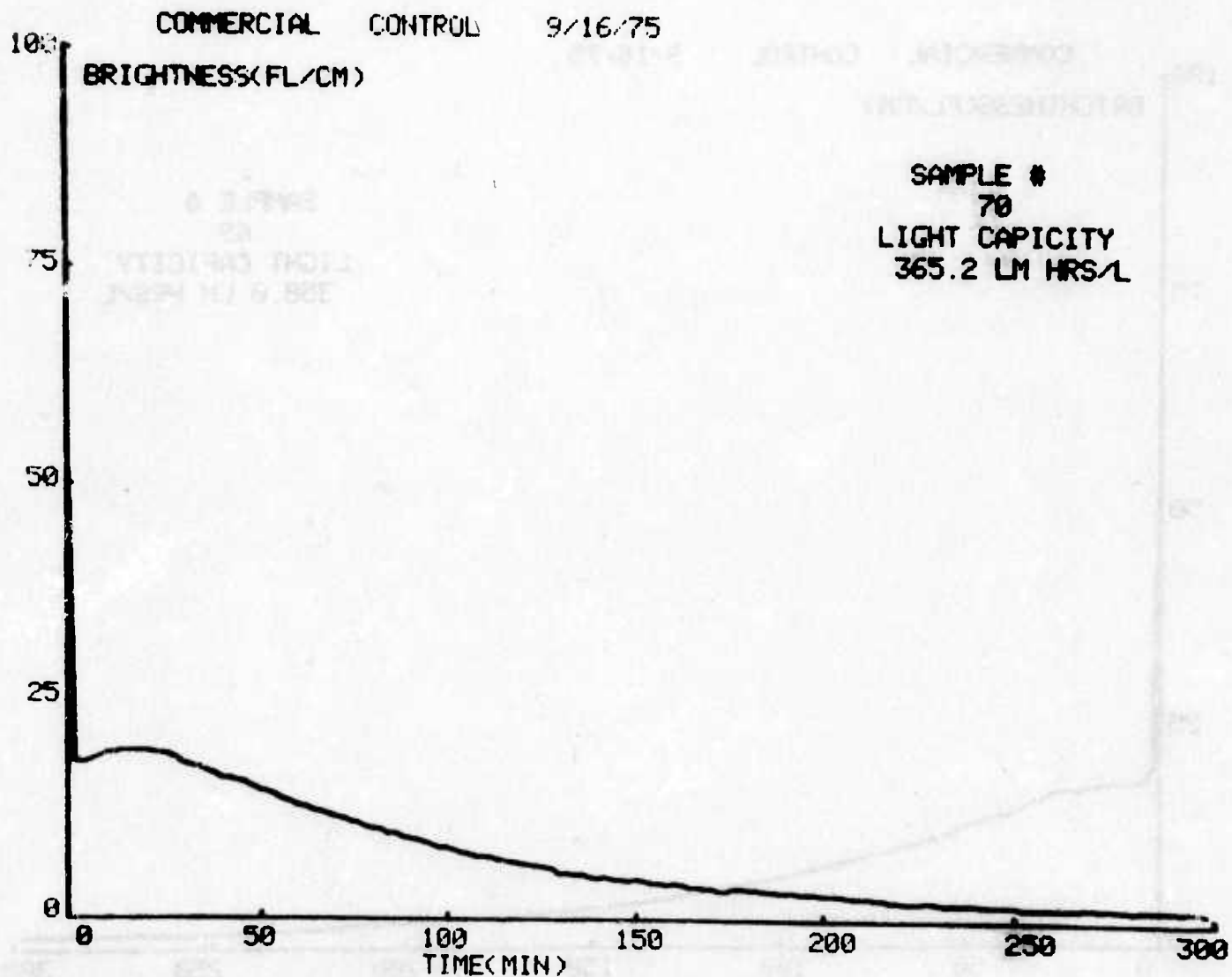


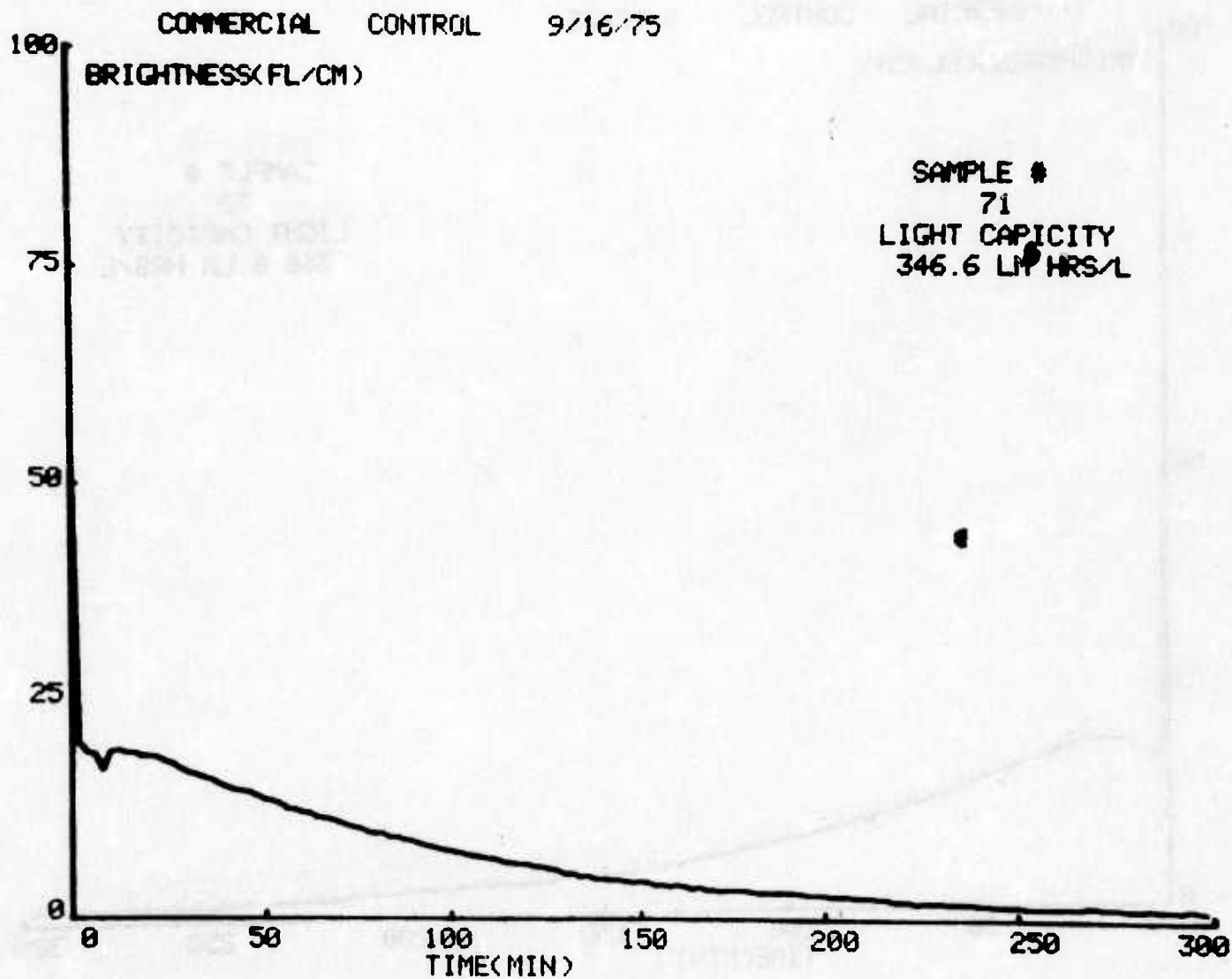


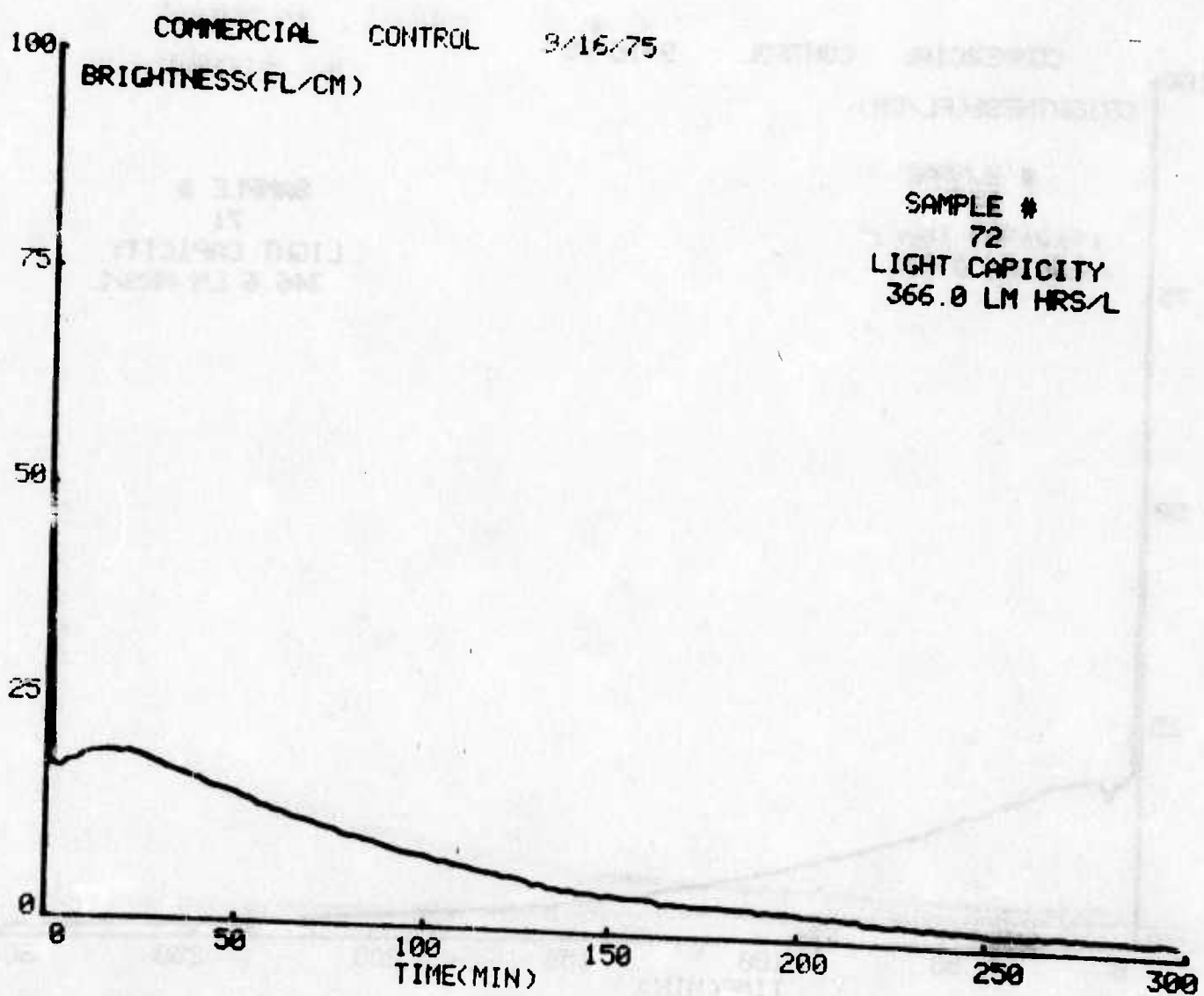




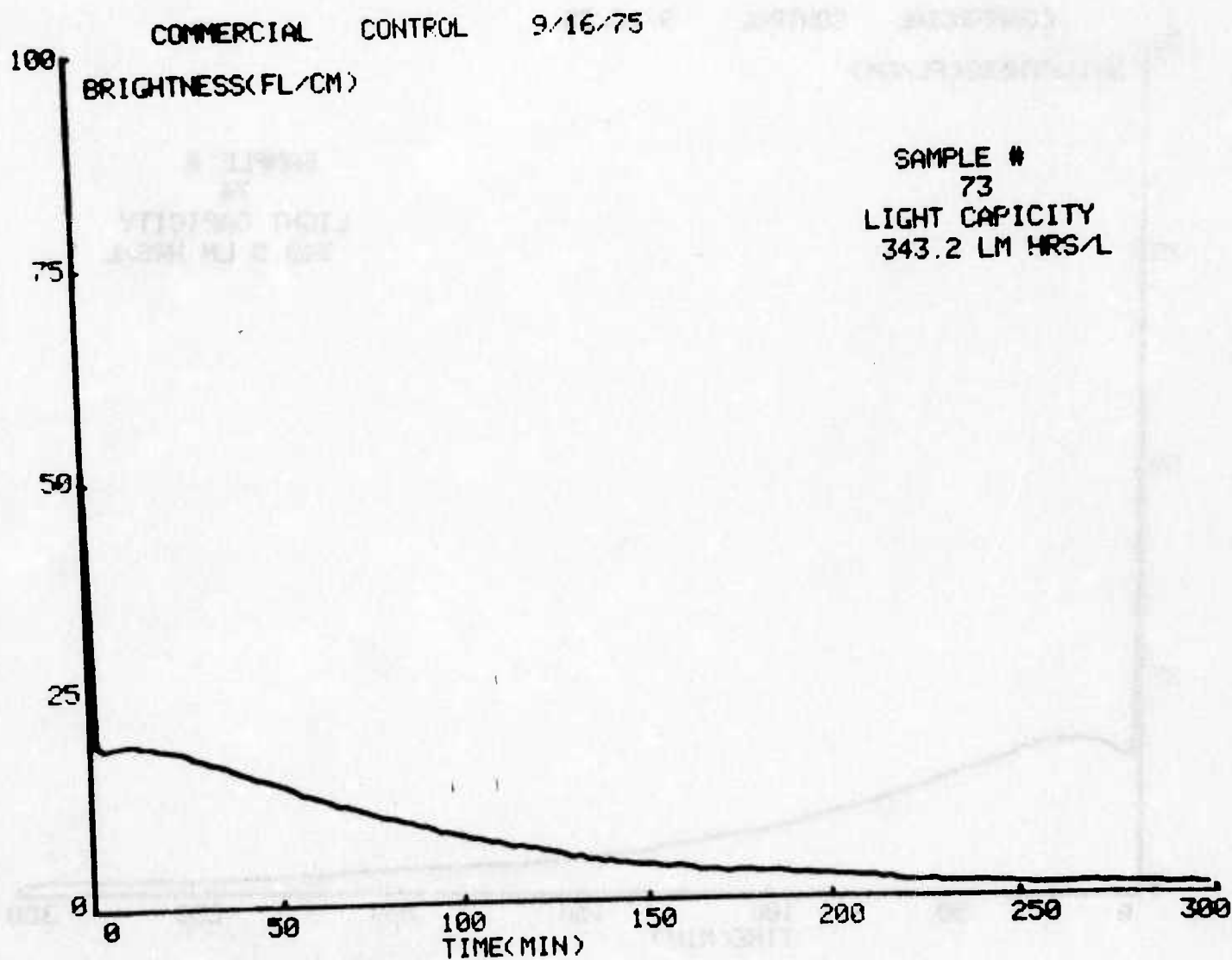






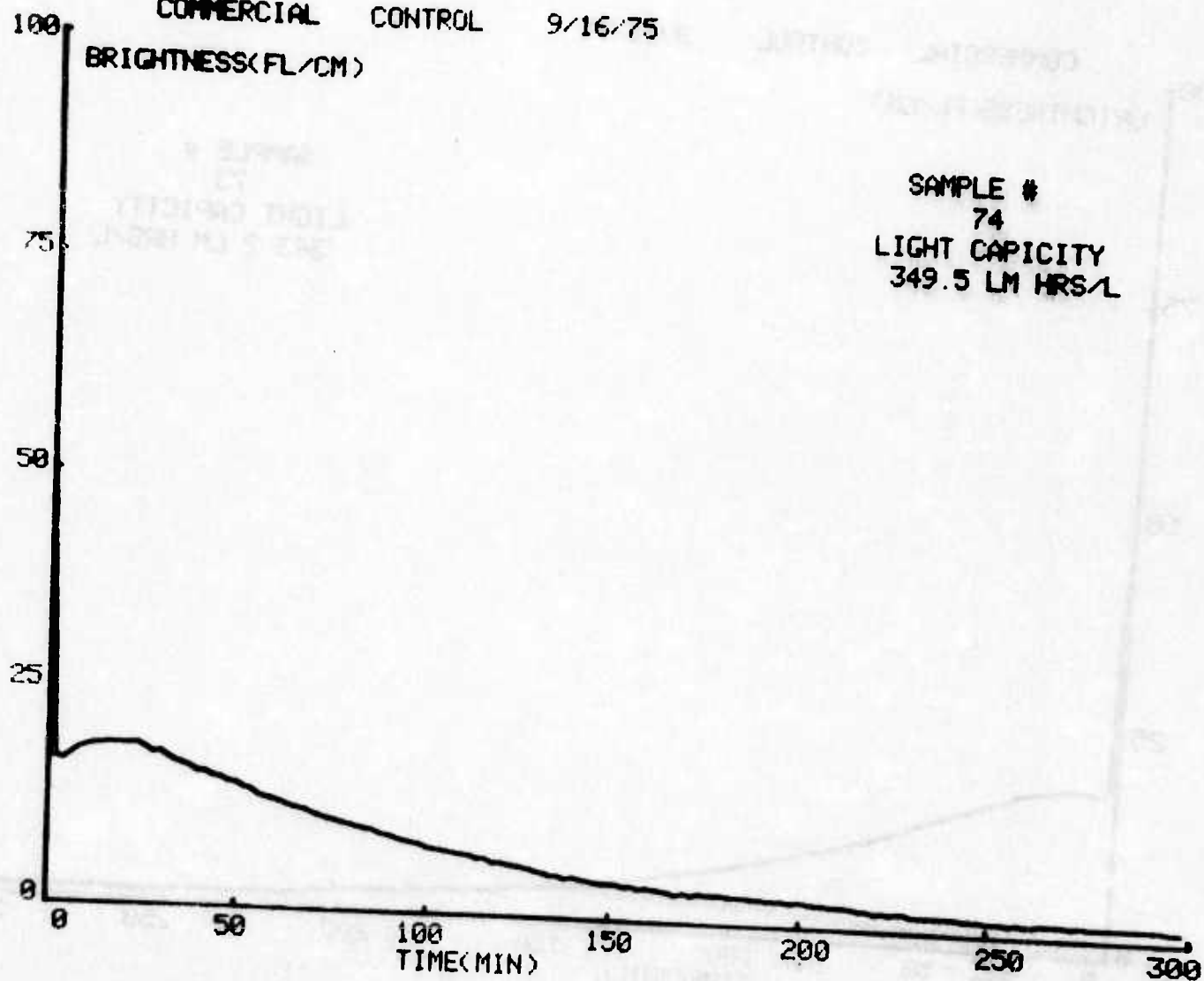




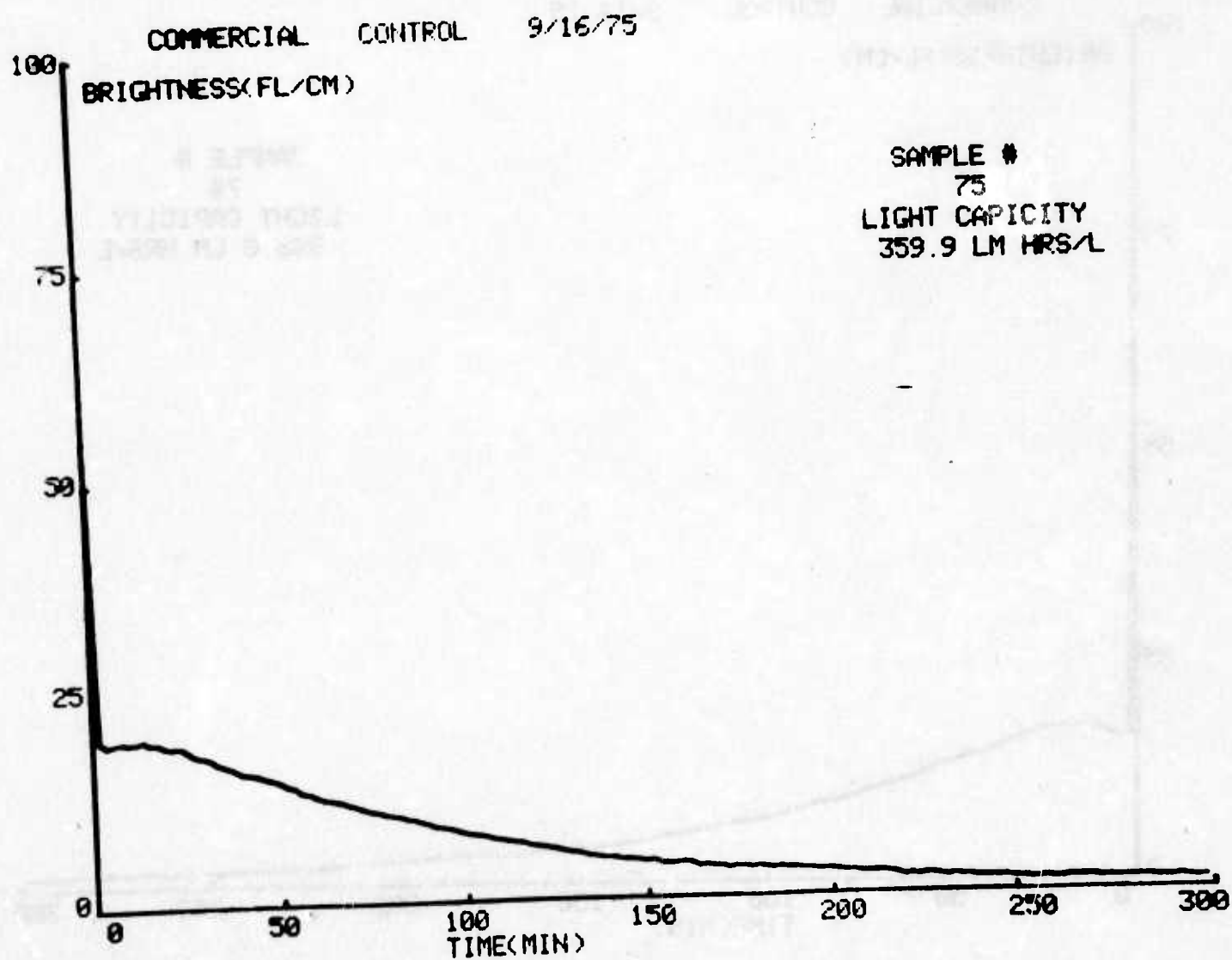


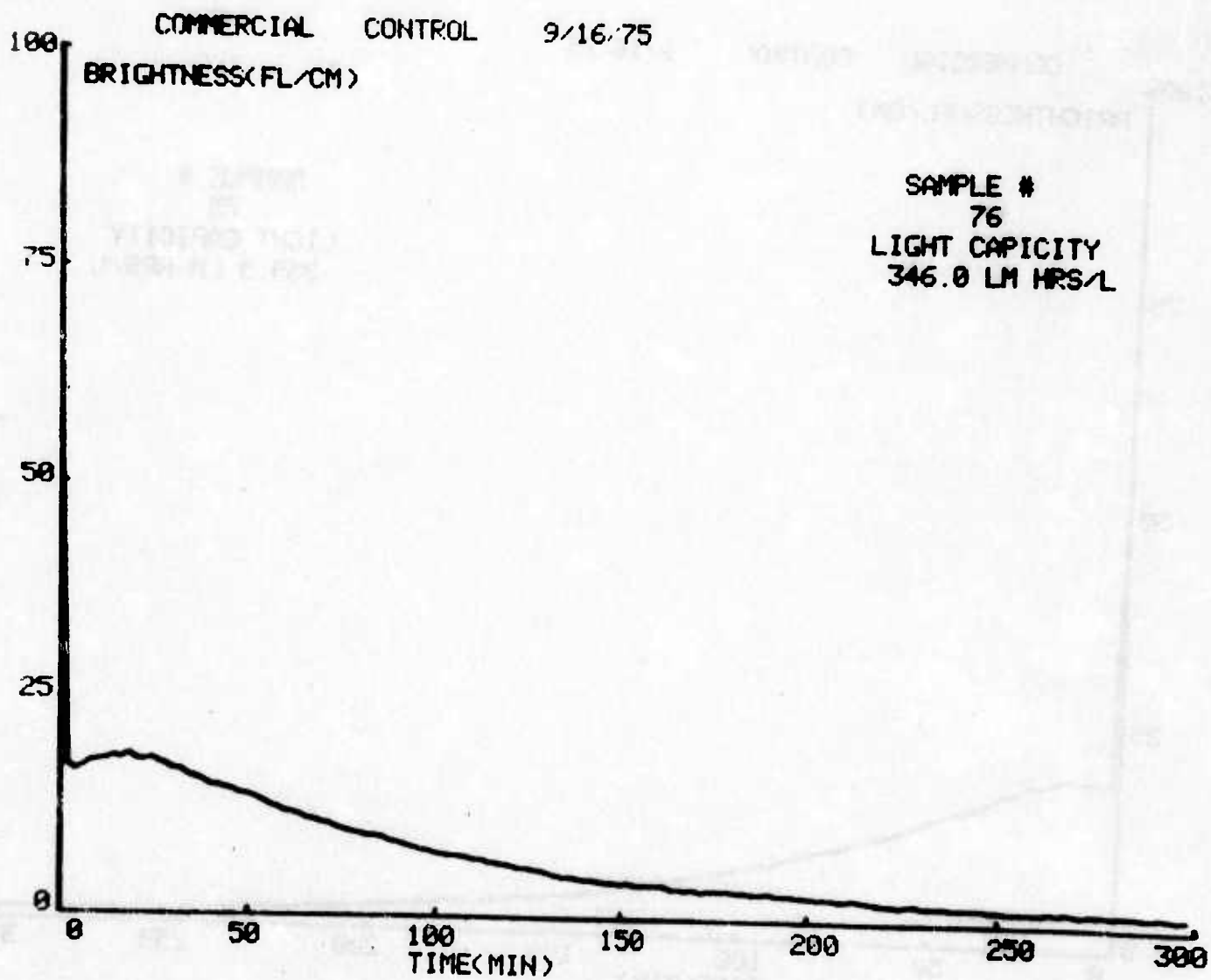
COMMERCIAL CONTROL 9/16/75  
BRIGHTNESS(FL/CM)

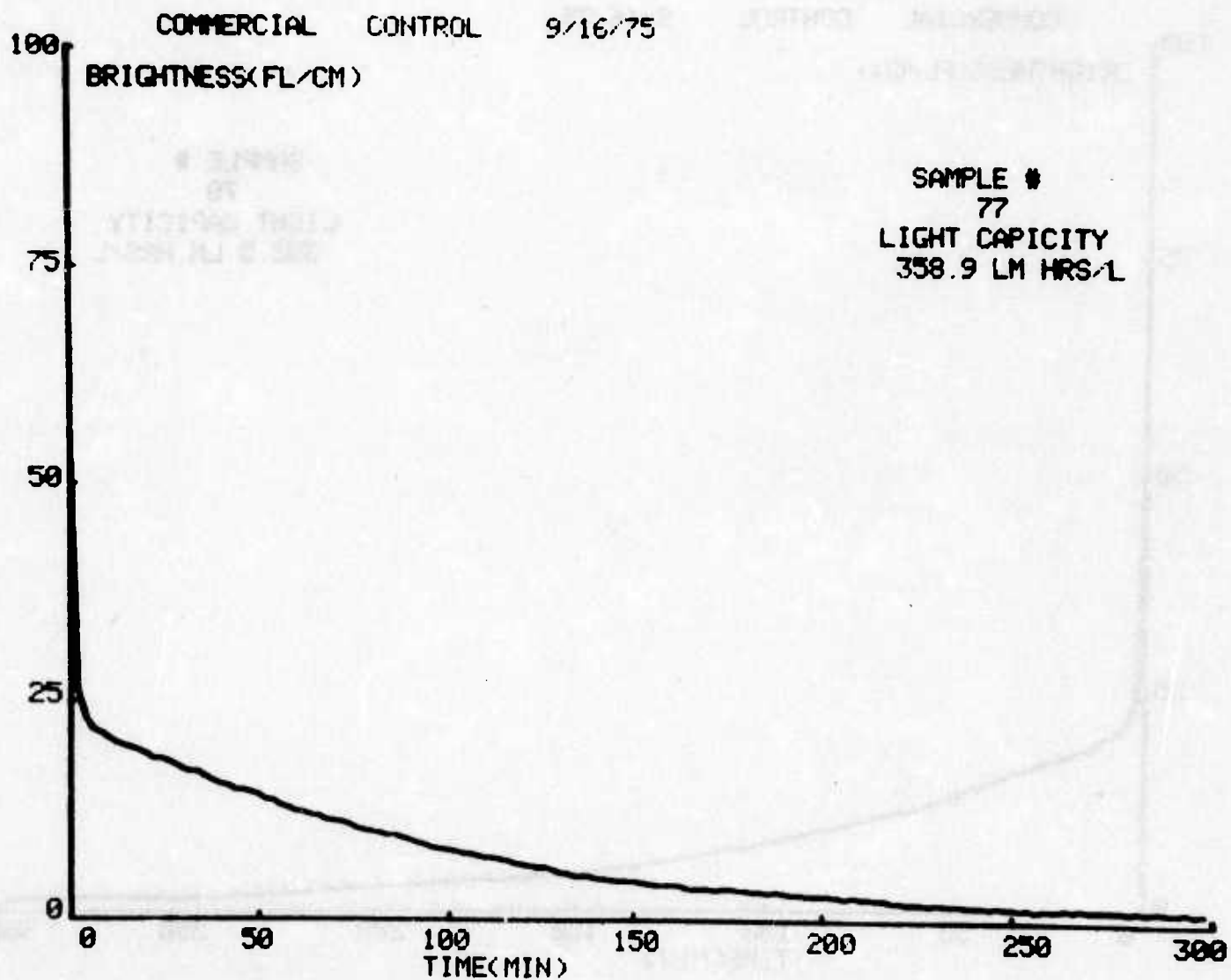
SAMPLE #  
74  
LIGHT CAPACITY  
349.5 LM HRS/L

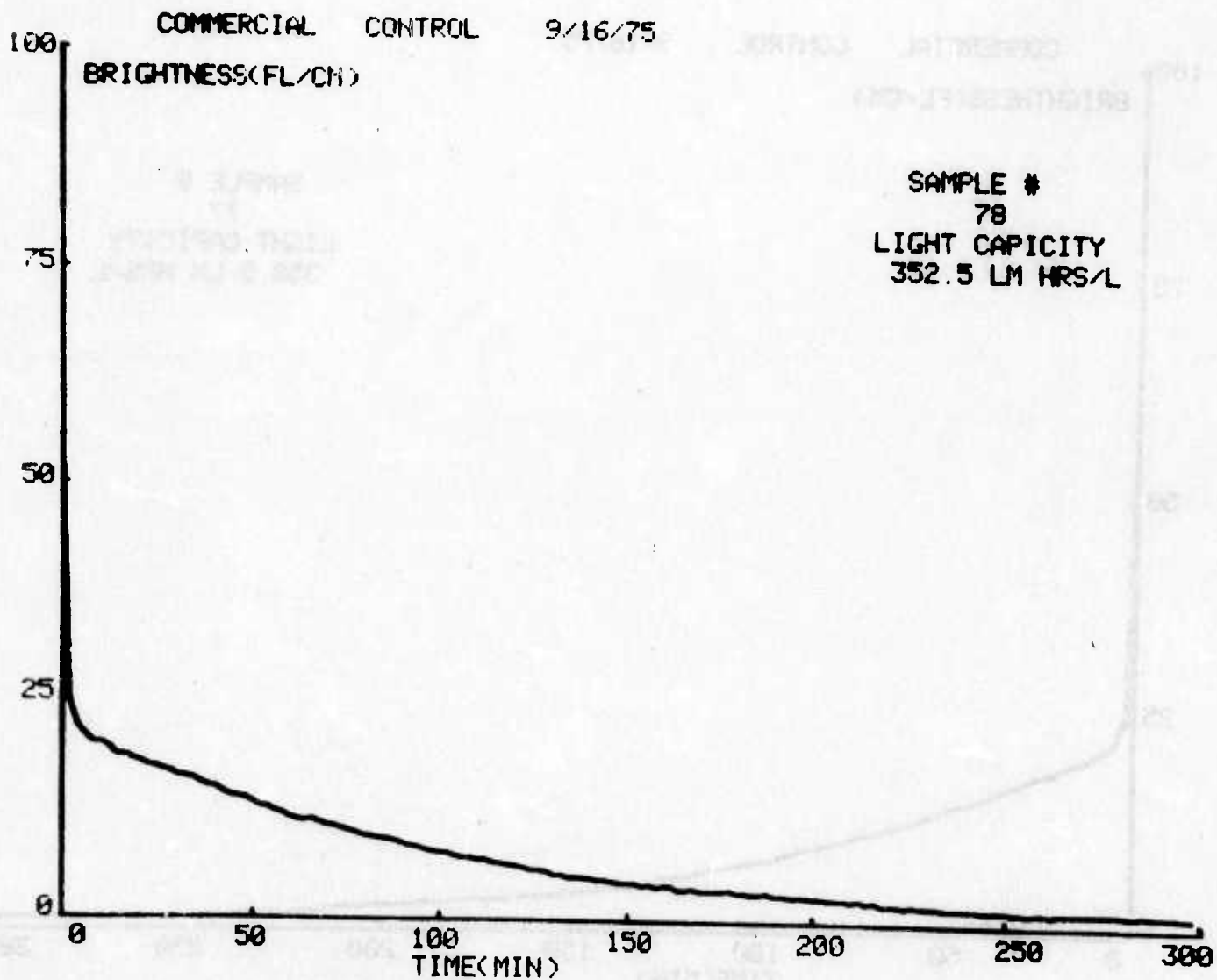


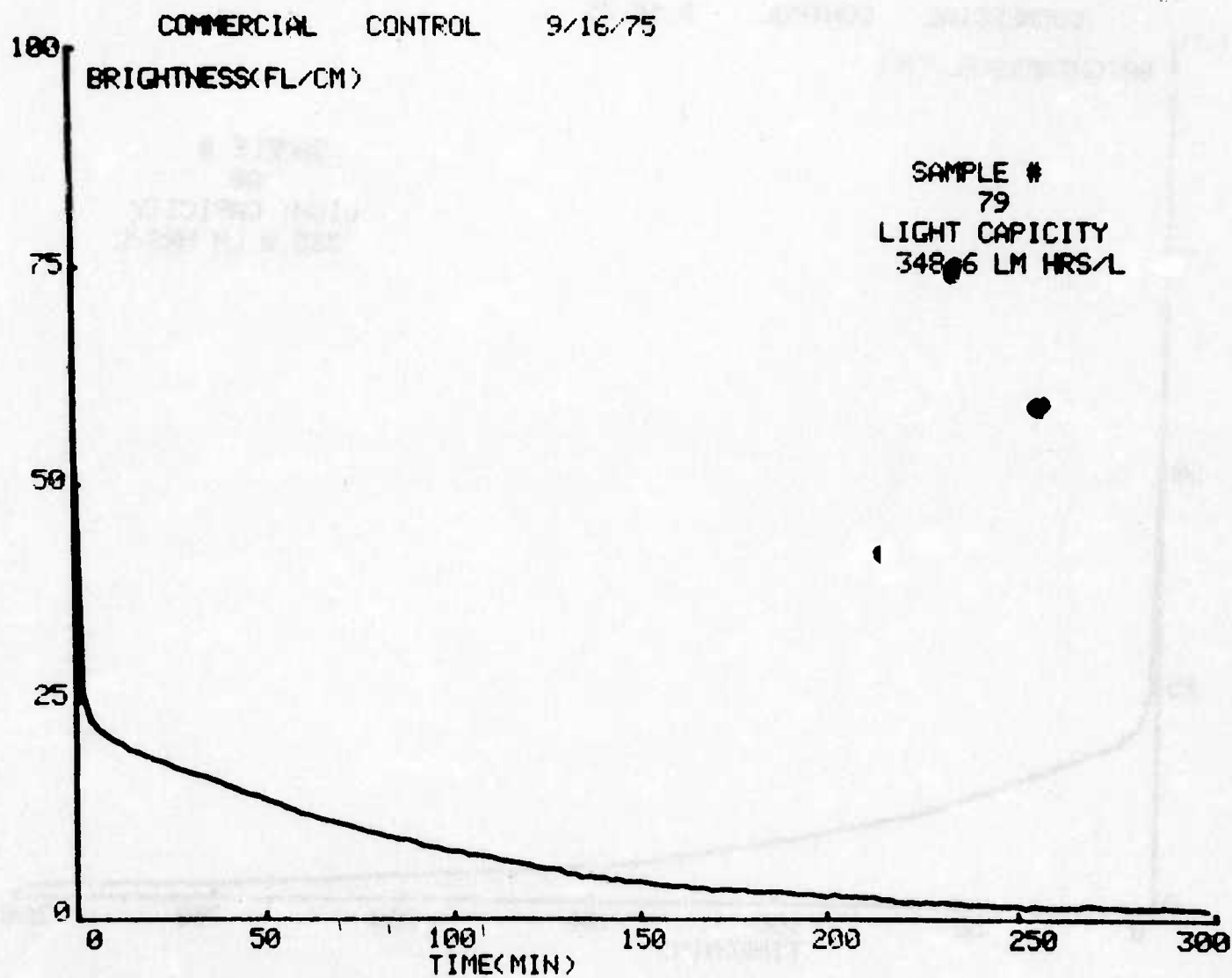




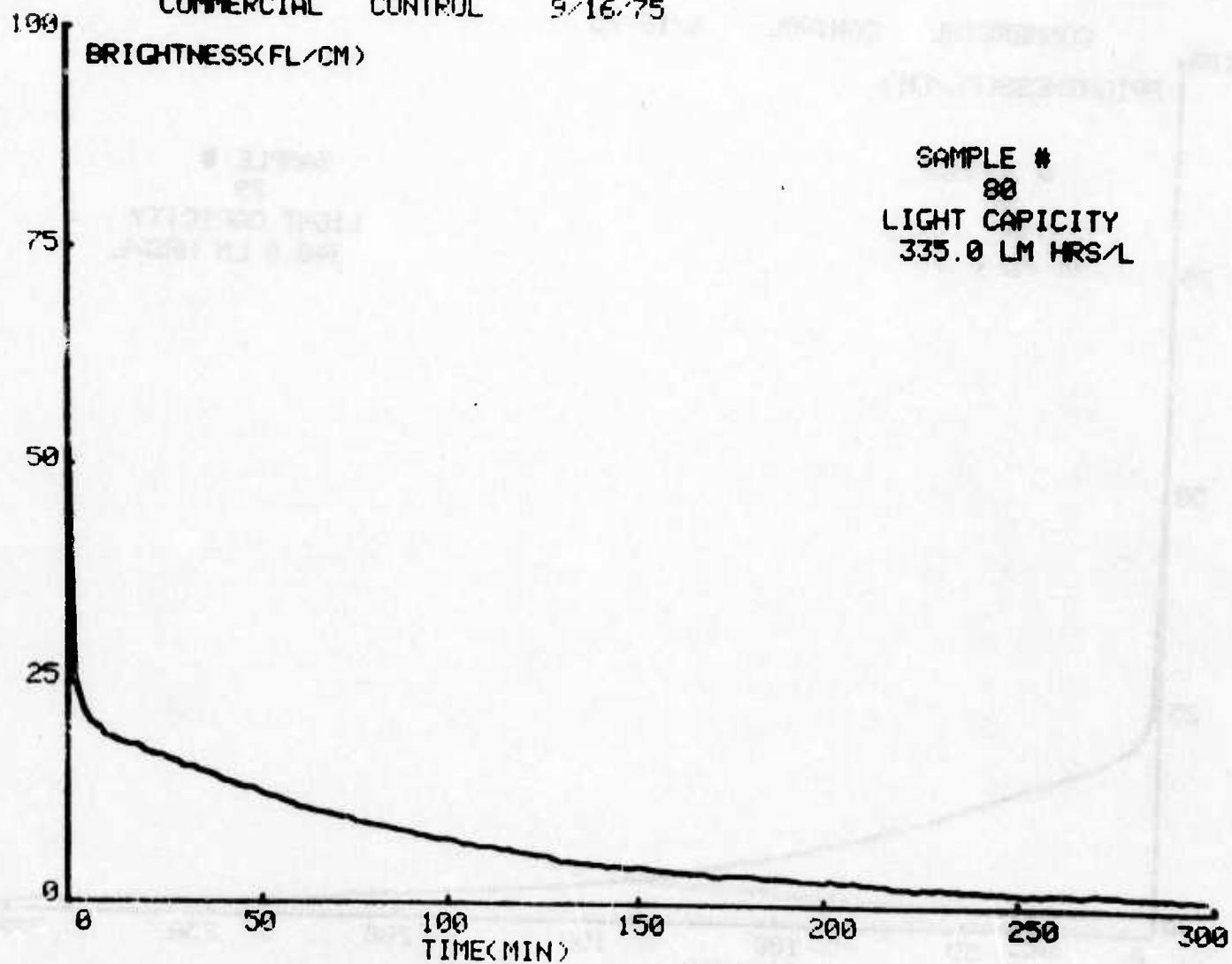


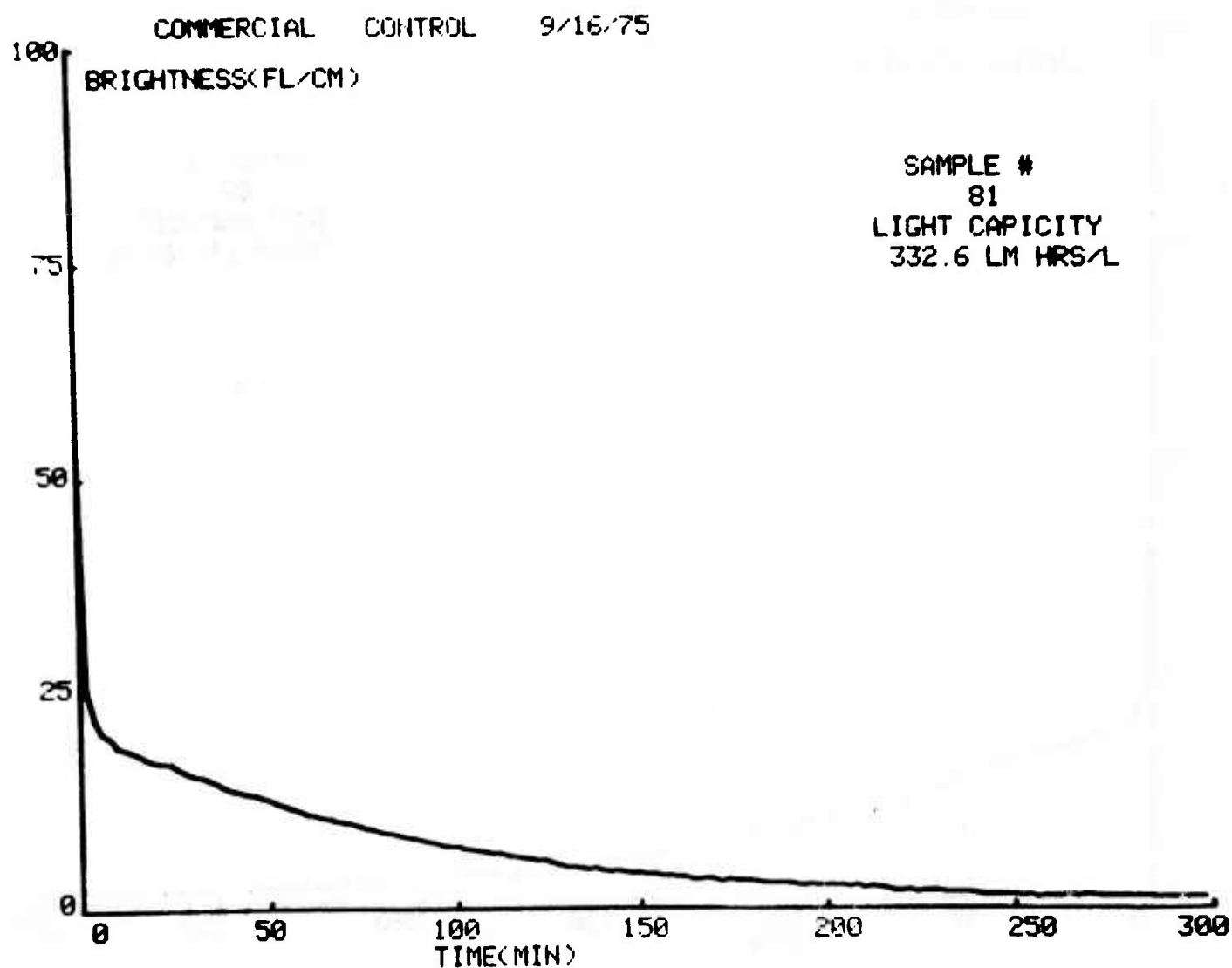




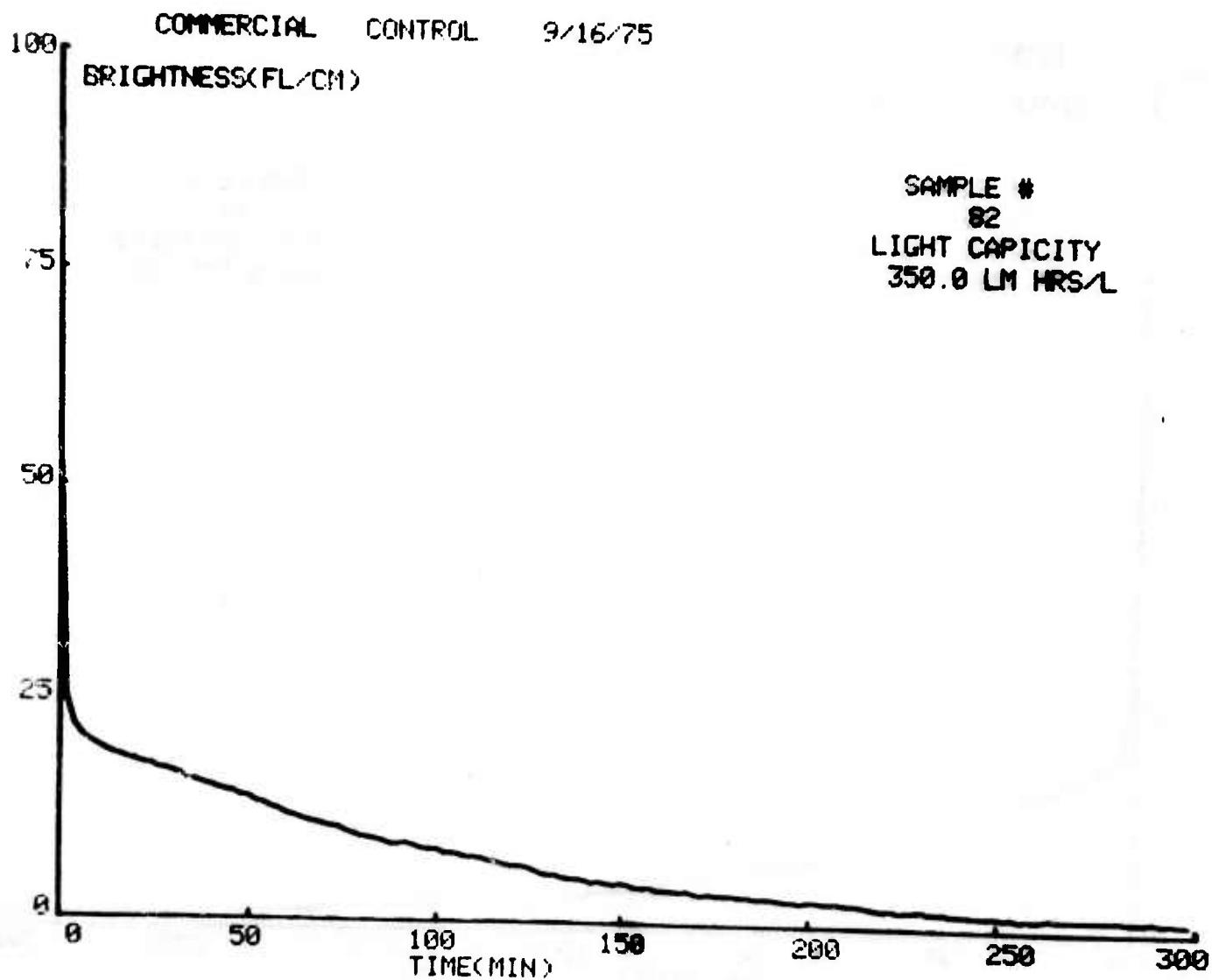


COMMERCIAL CONTROL 9/16/75

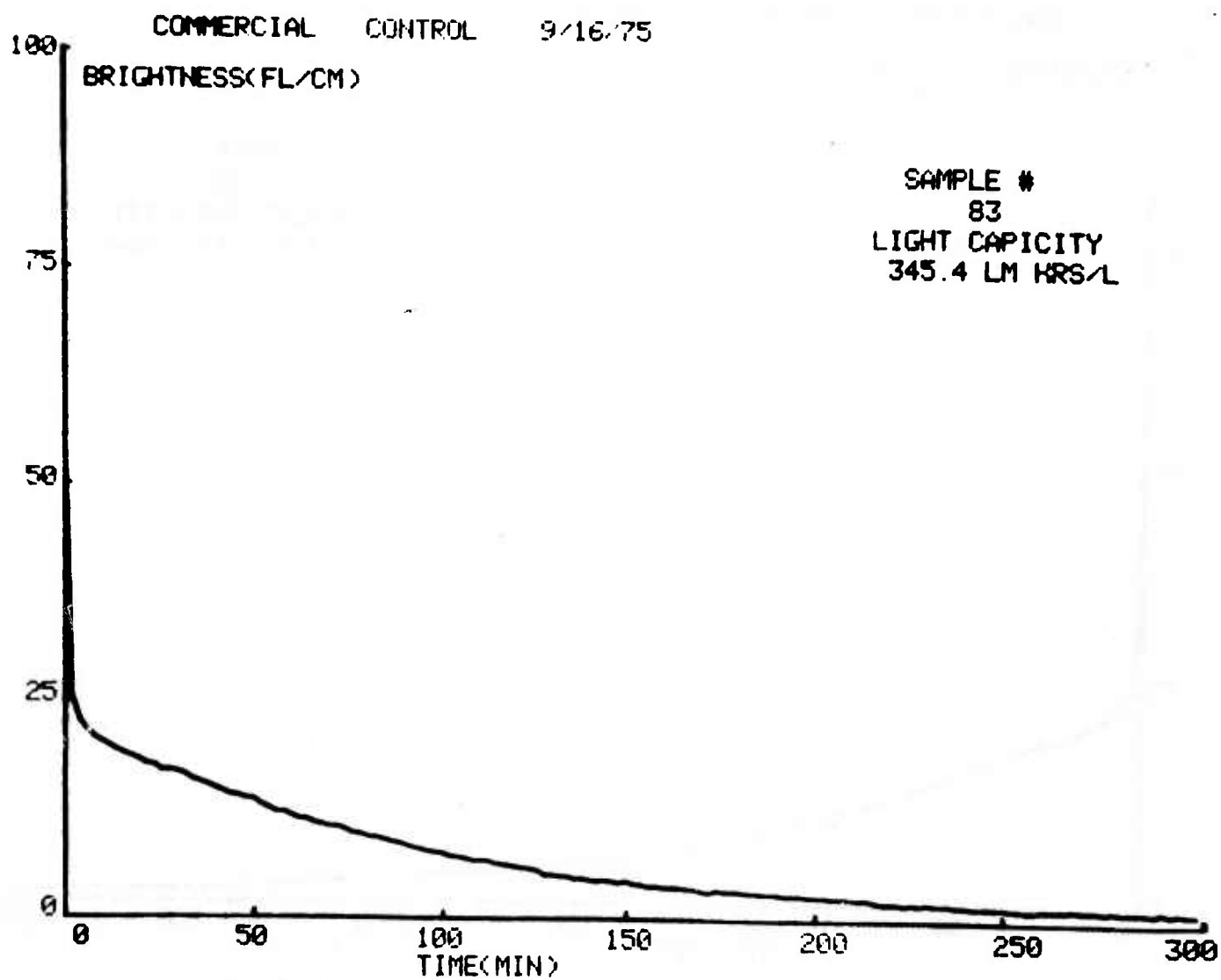




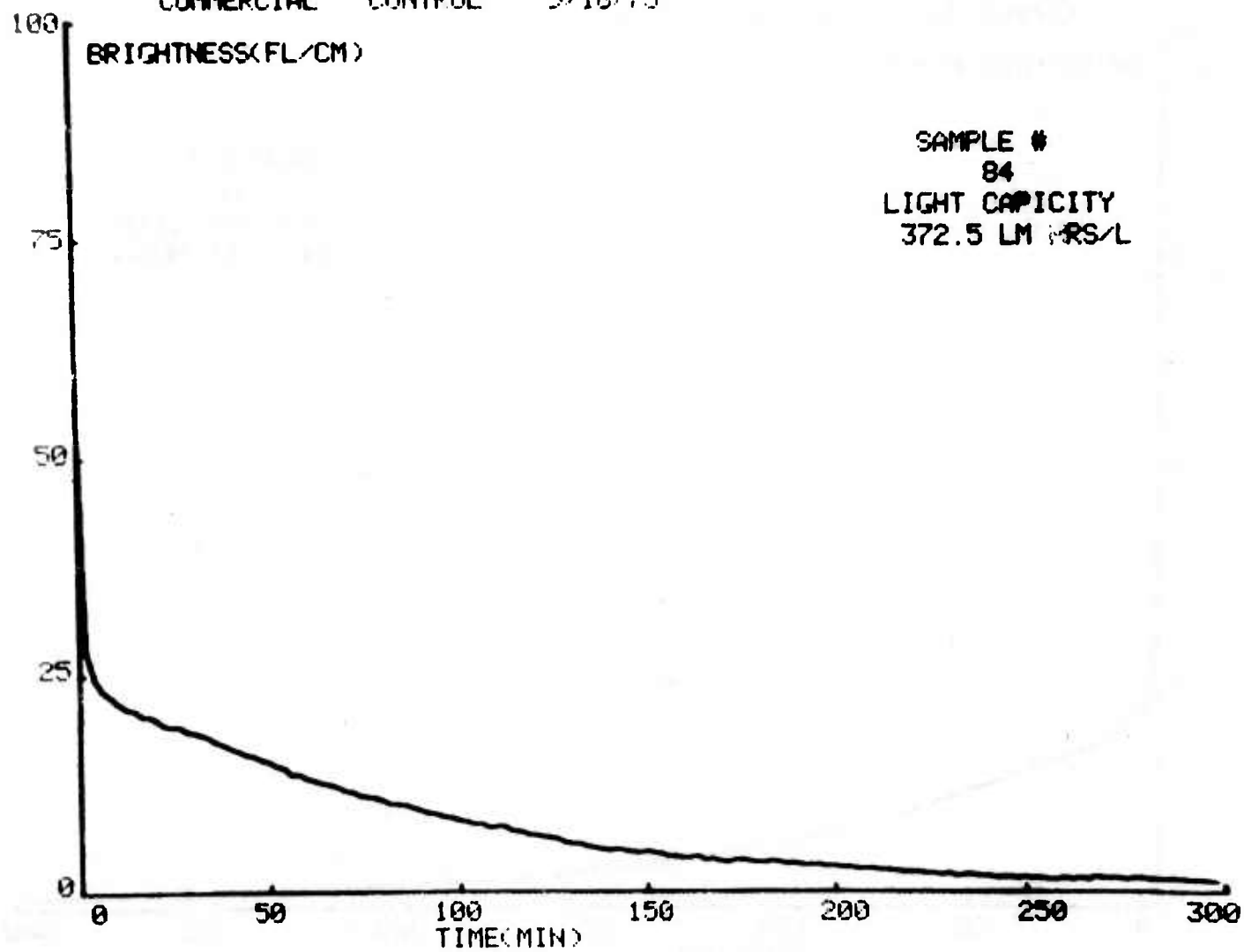


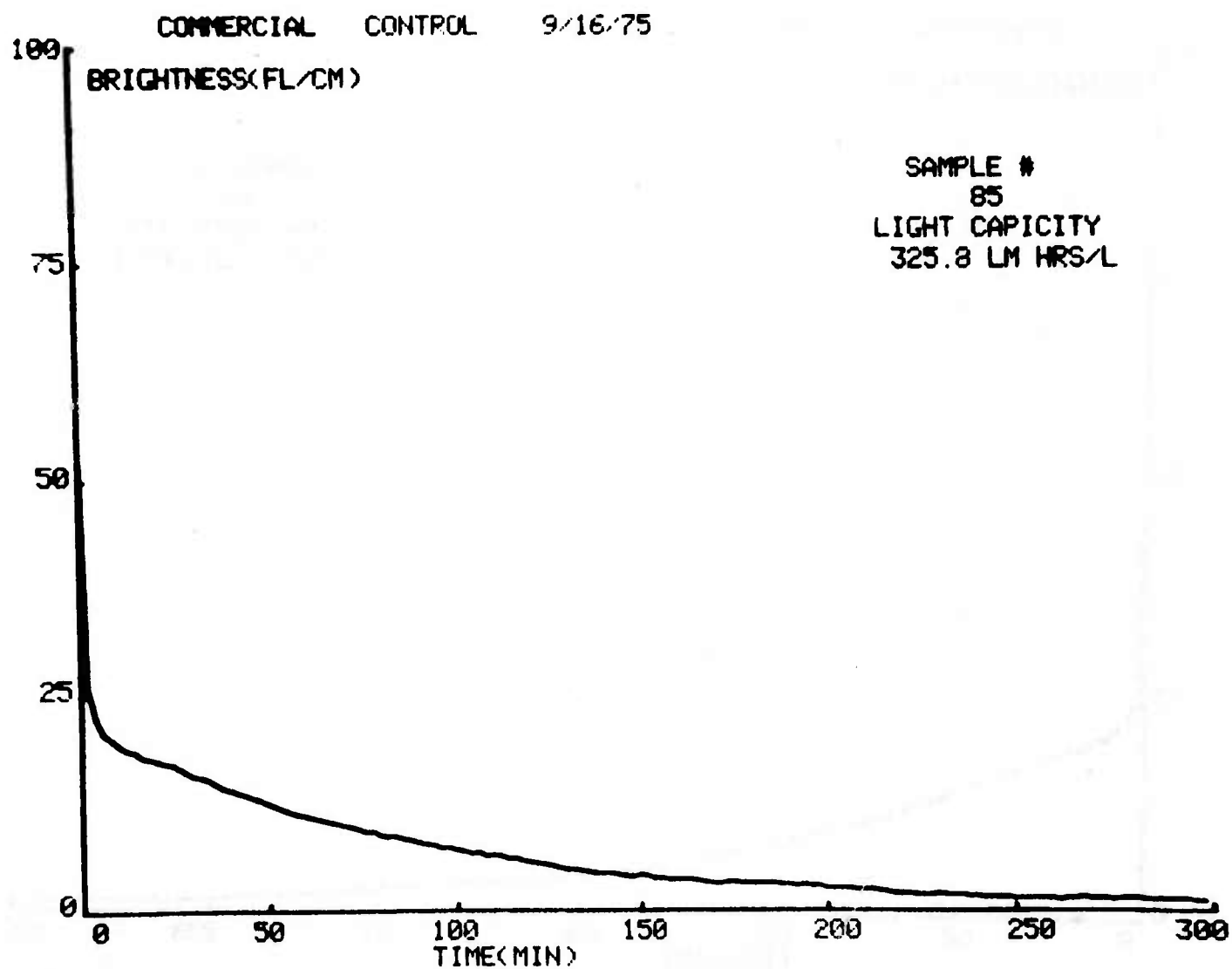




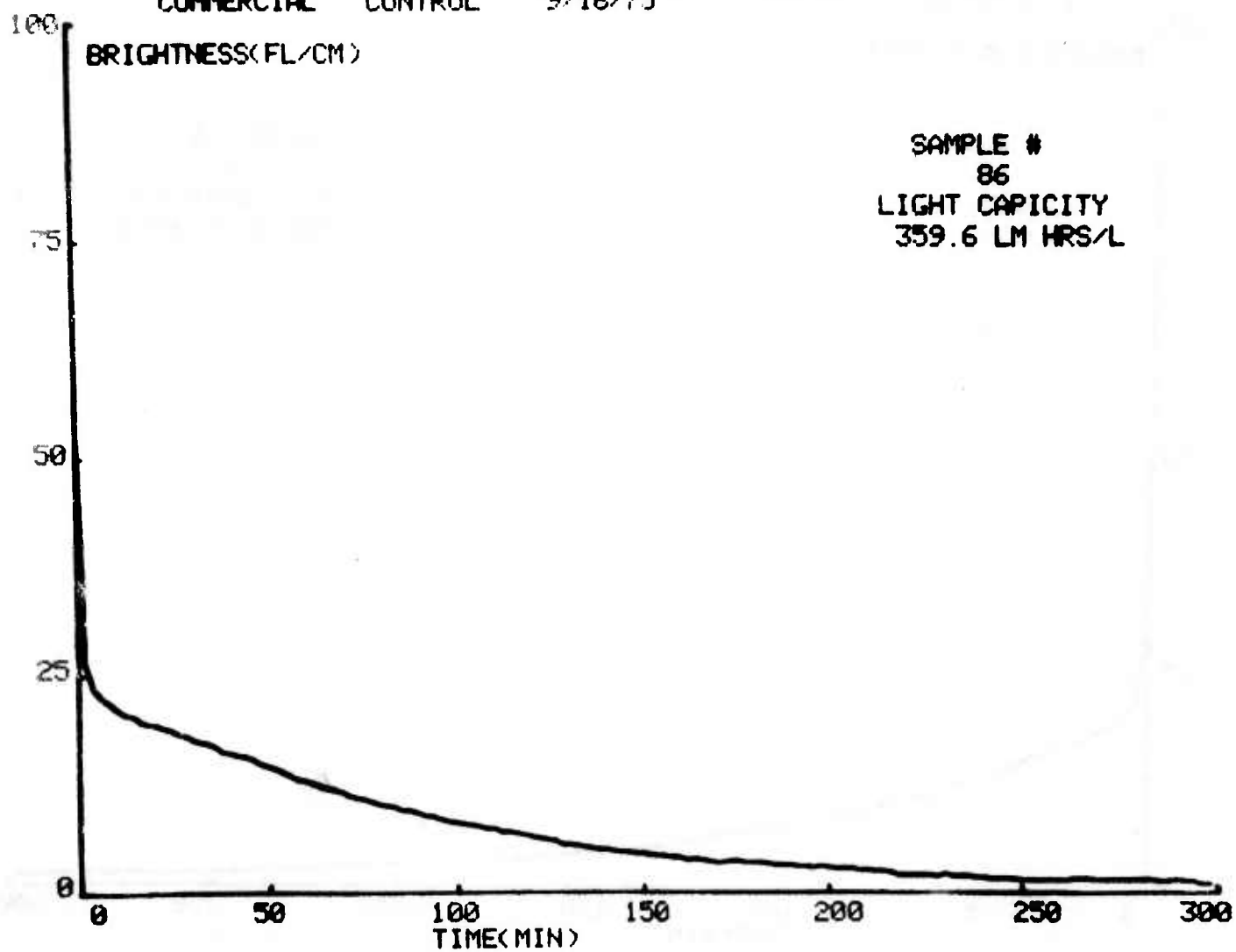


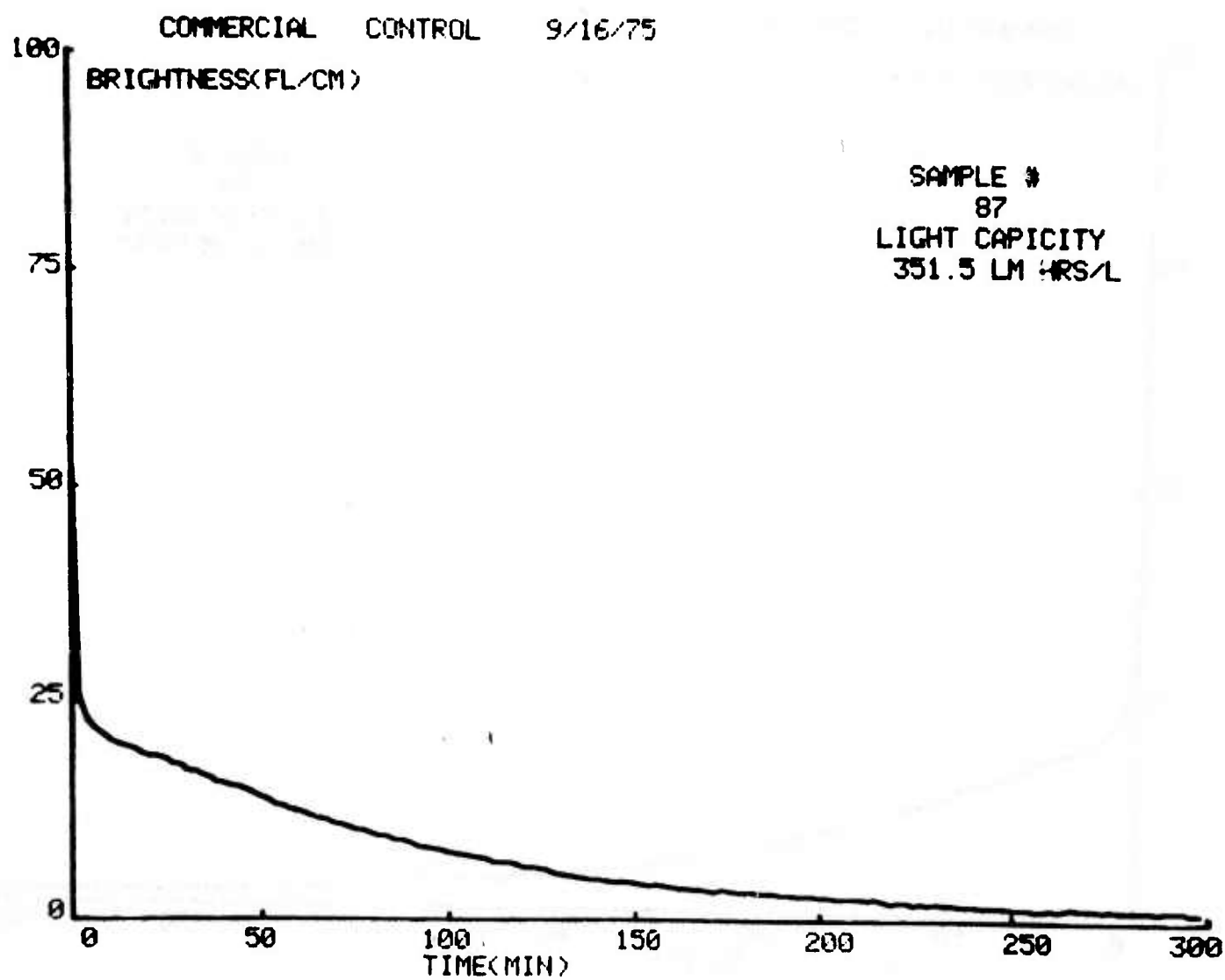
COMMERCIAL CONTROL 9/16/75



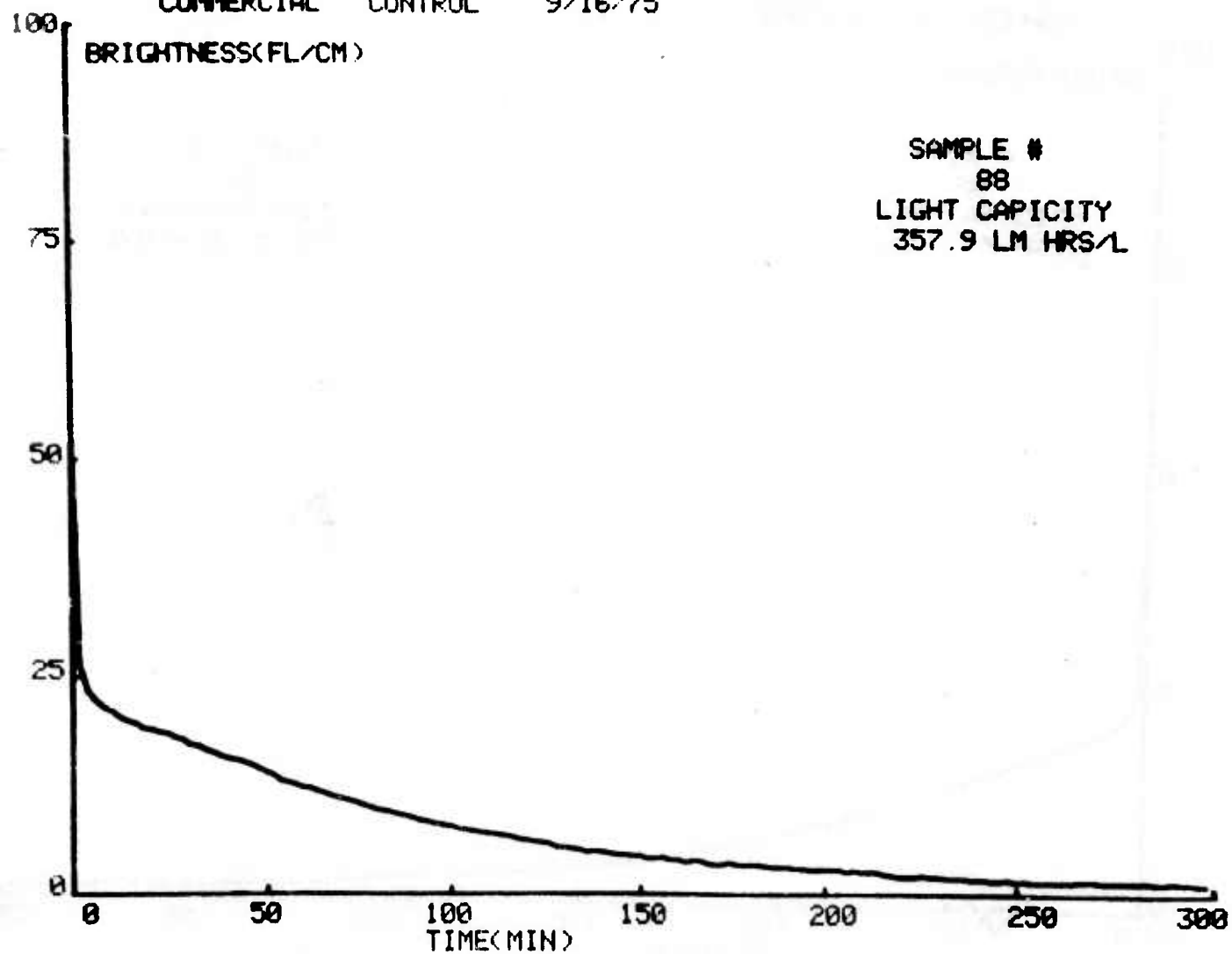


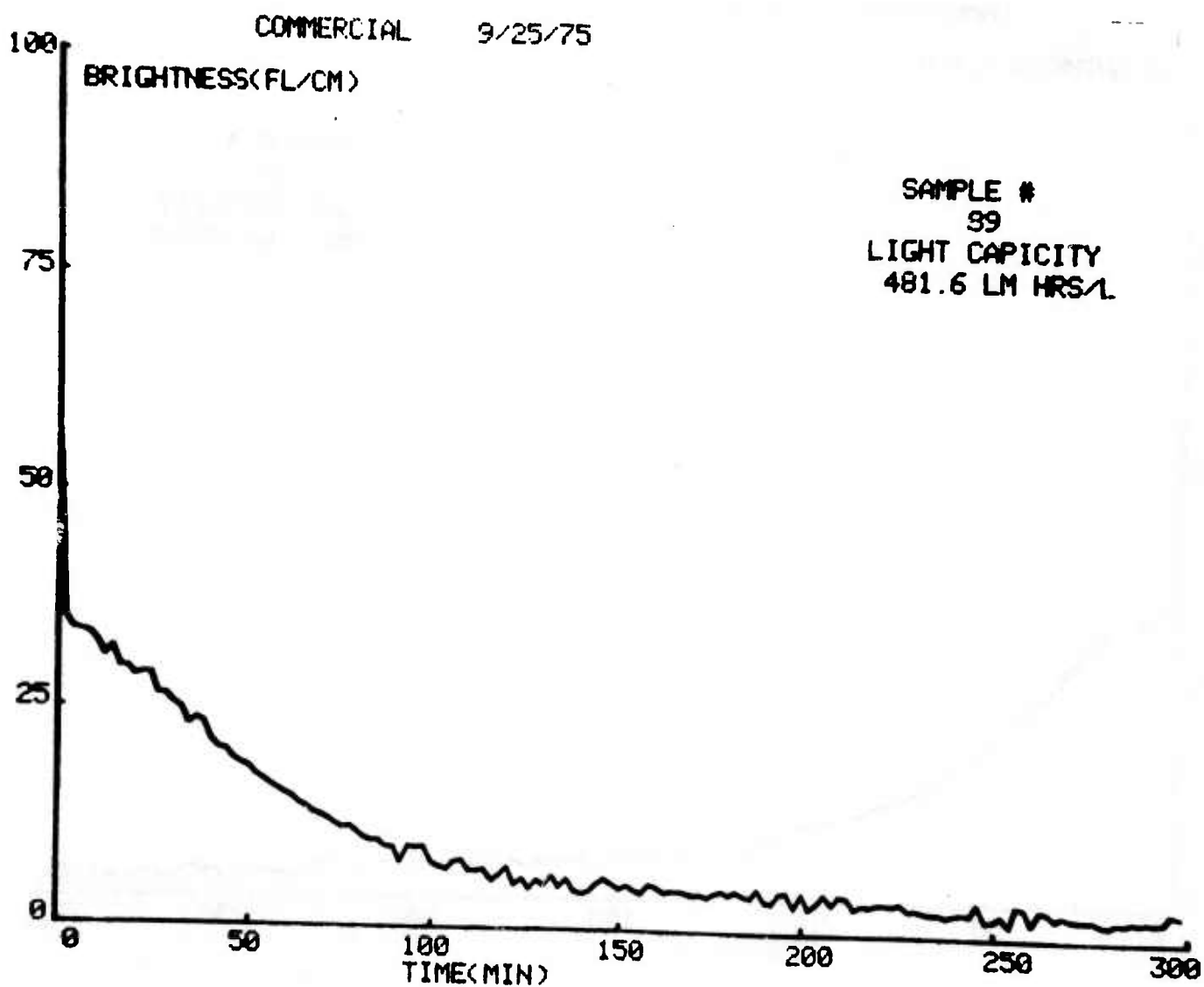
COMMERCIAL CONTROL 9/16/75





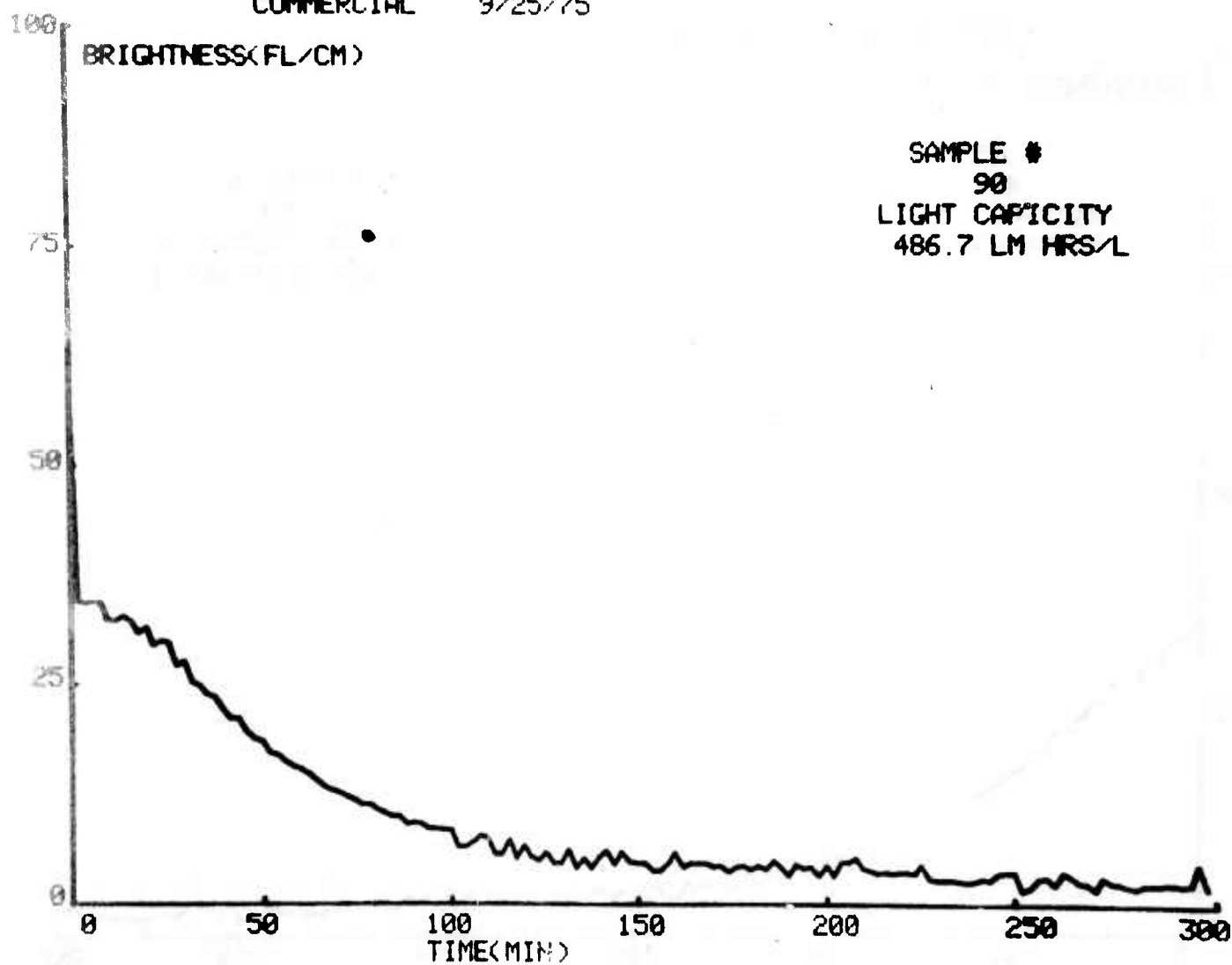
COMMERCIAL CONTROL 9/16/75



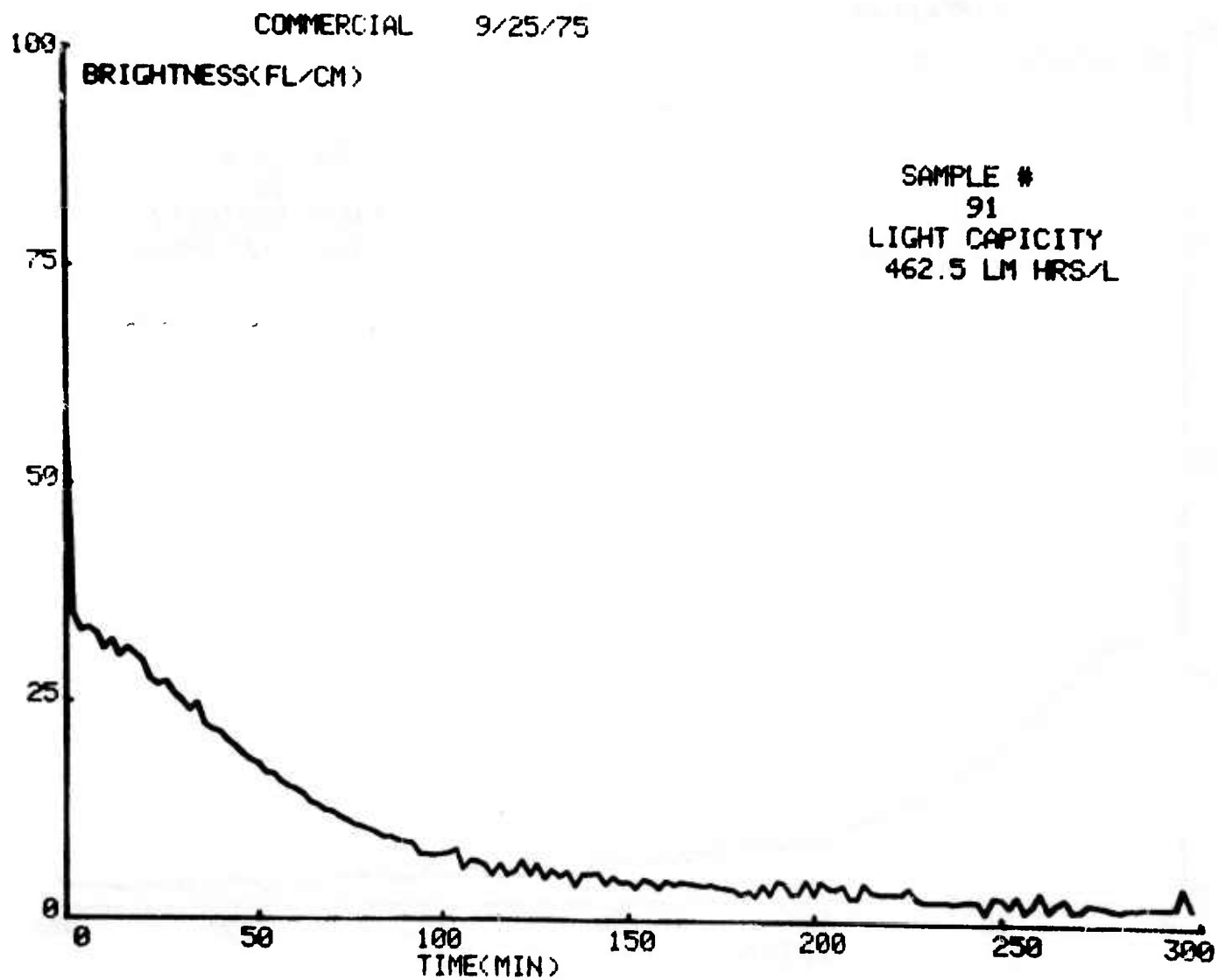


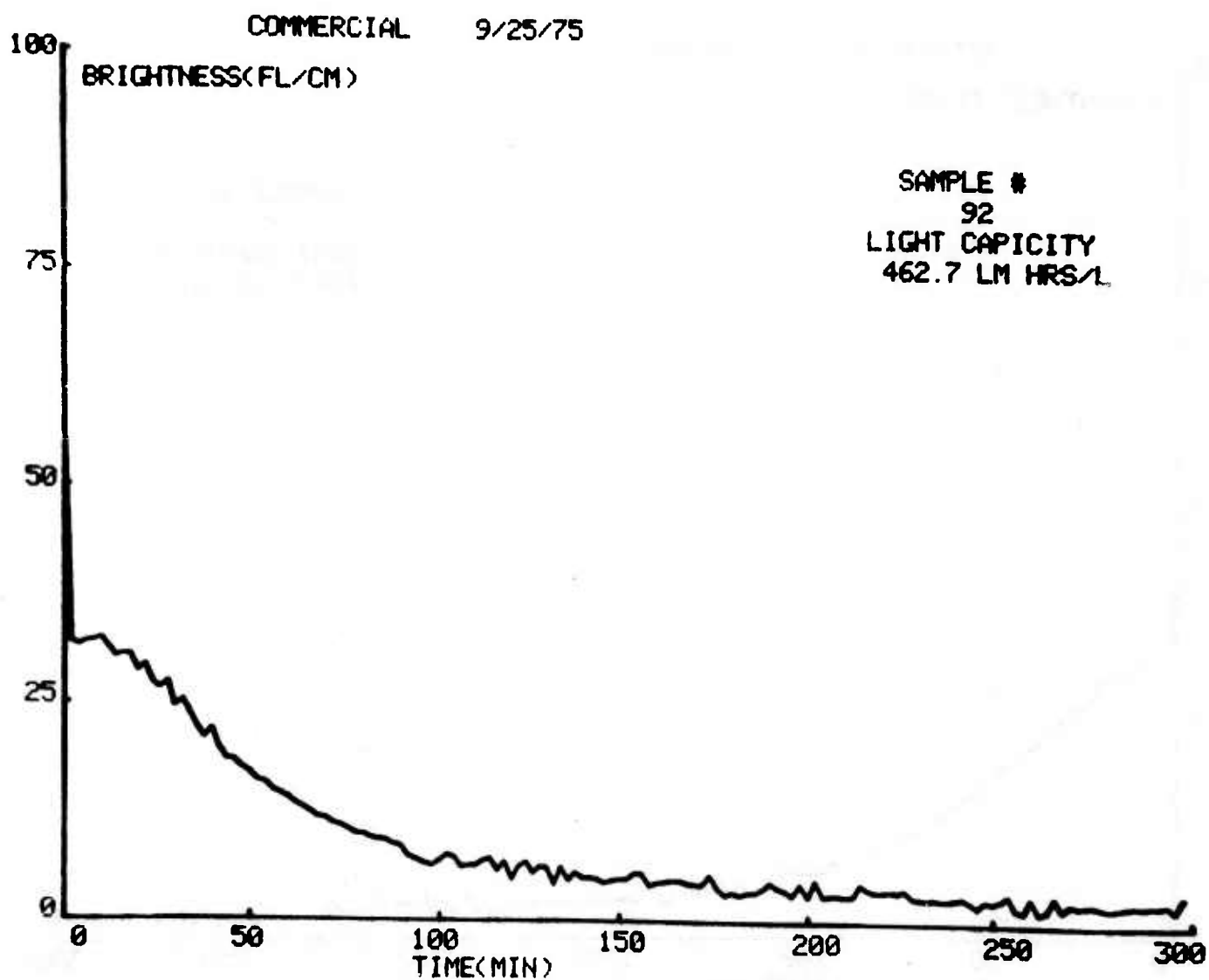
COMMERCIAL 9/25/75

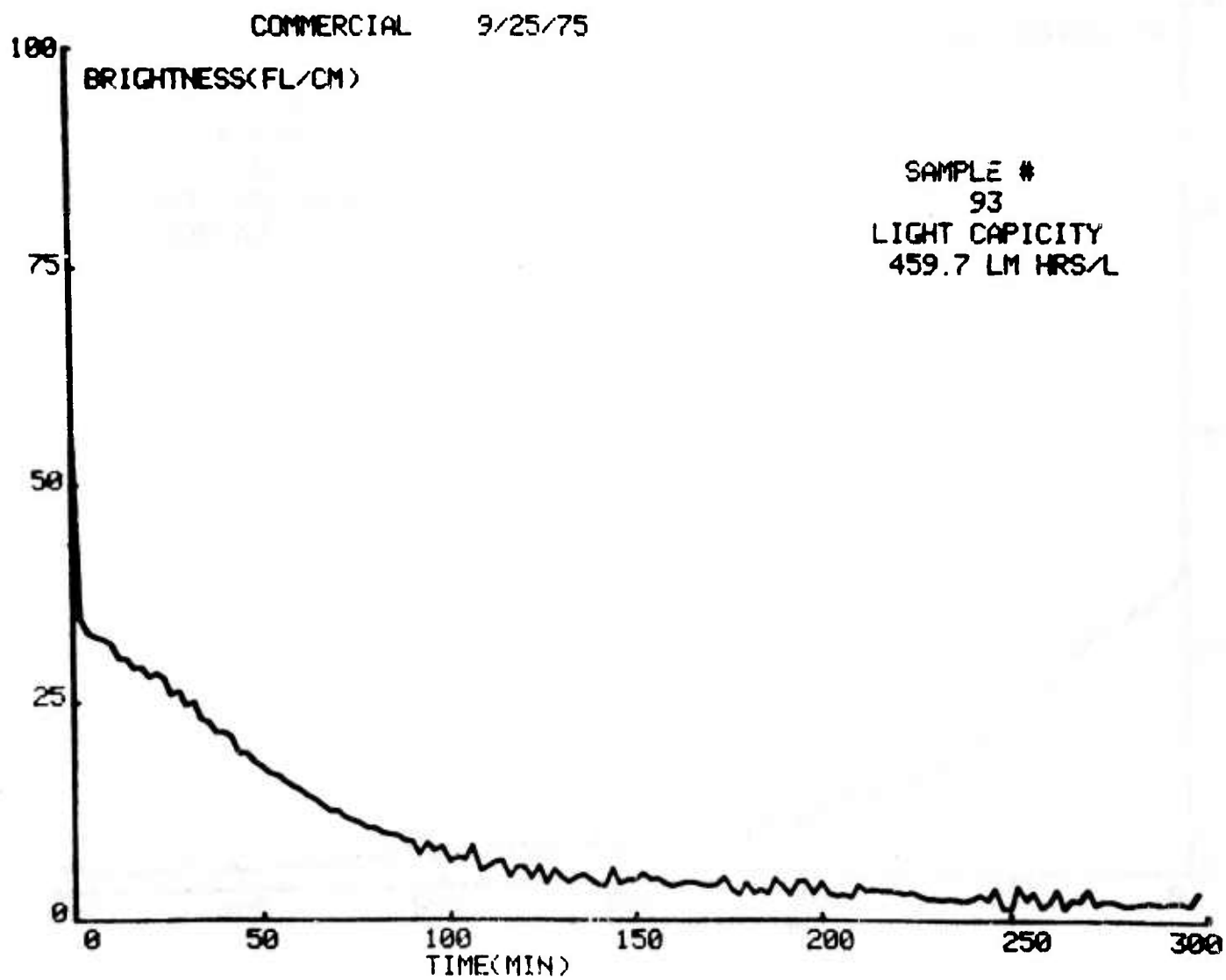
SAMPLE #  
90  
LIGHT CAPACITY  
486.7 LM HRS/L

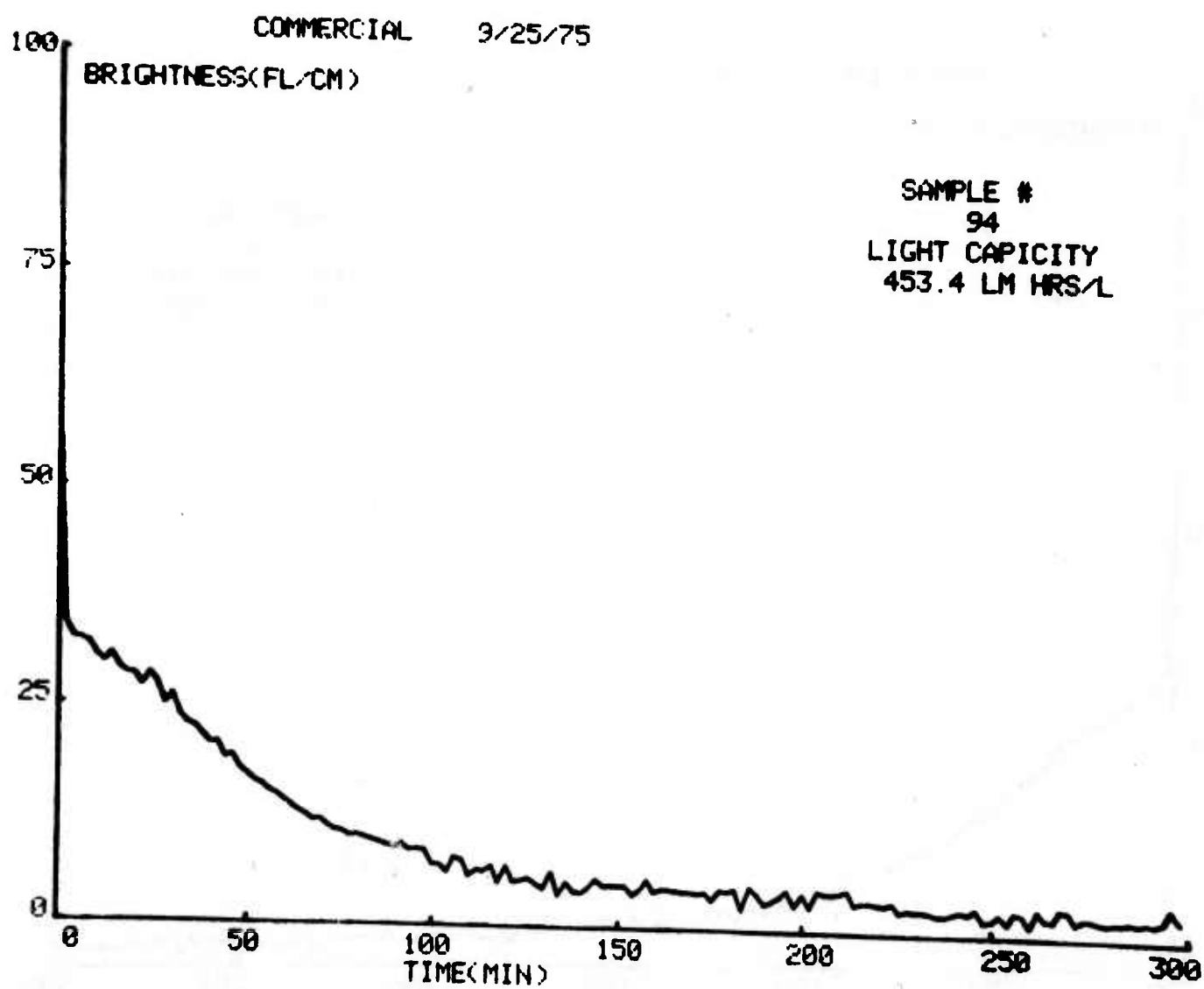


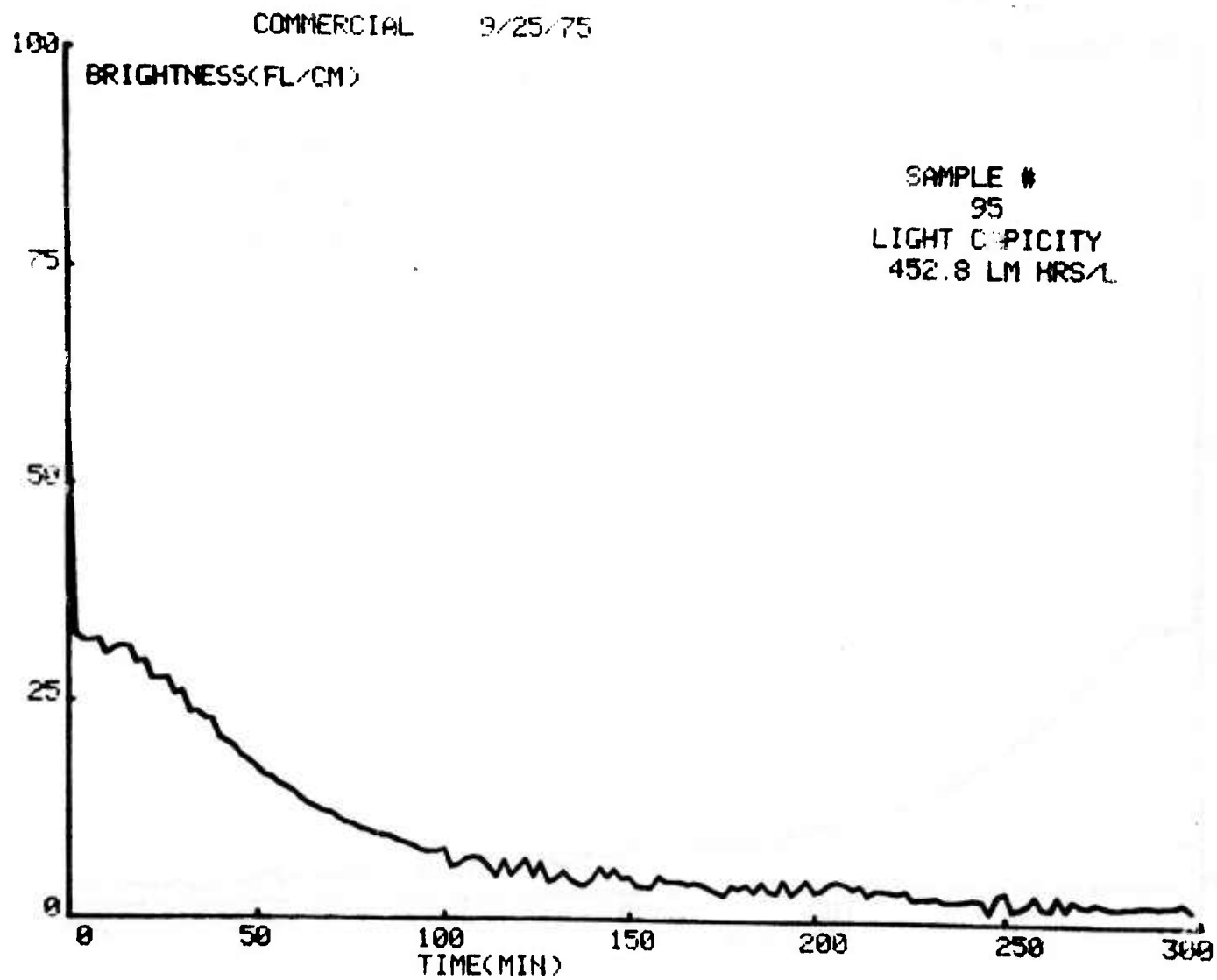


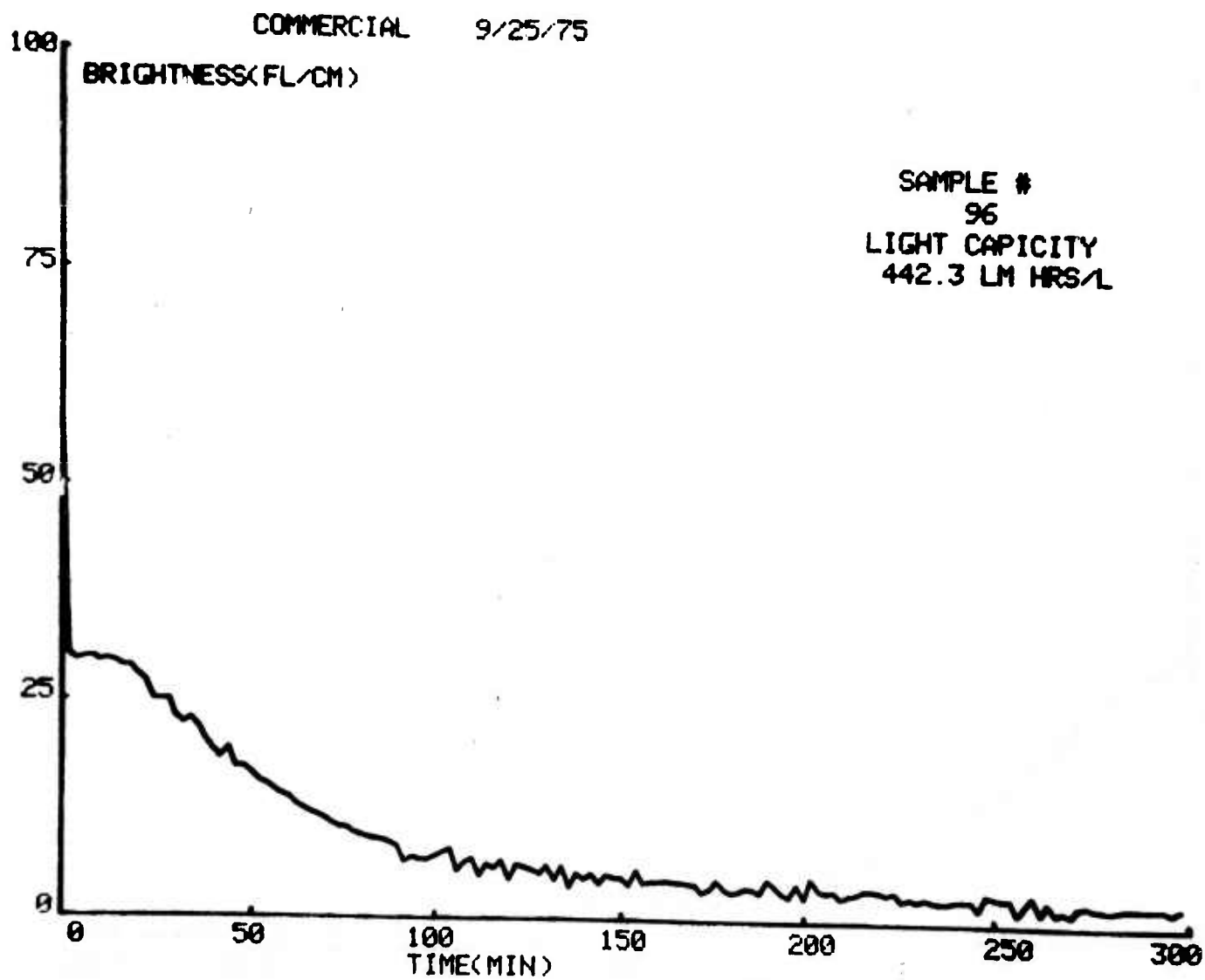


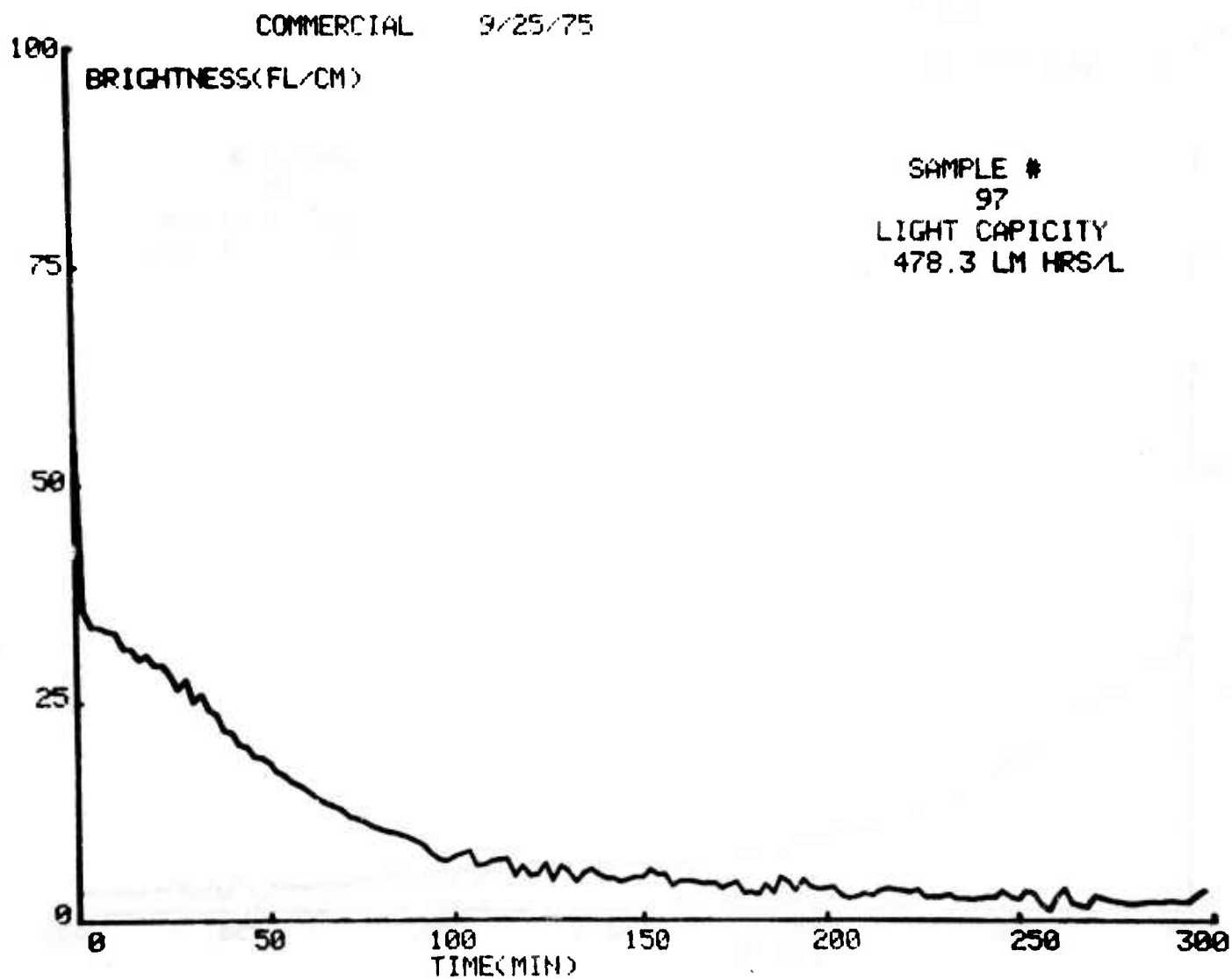


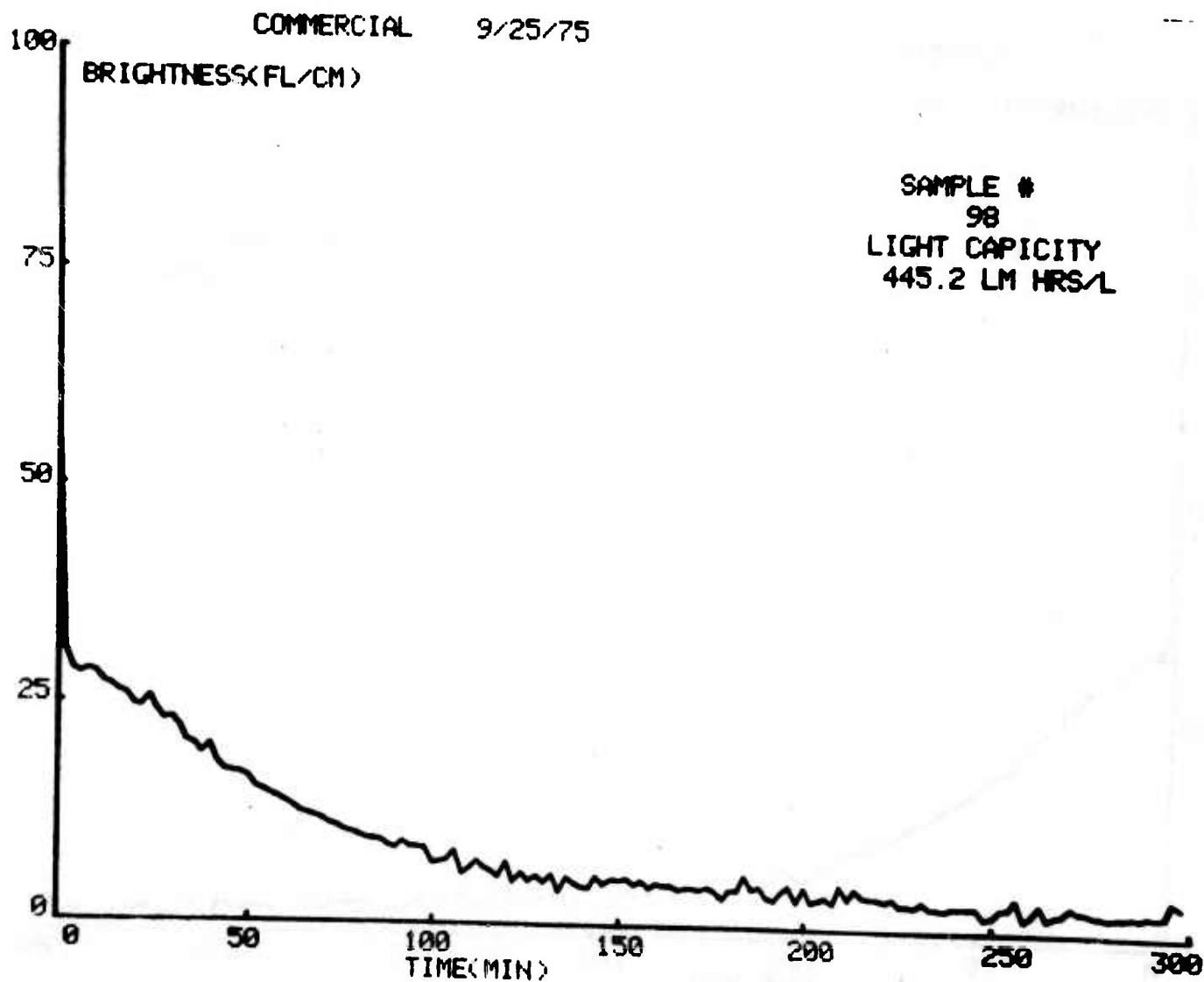




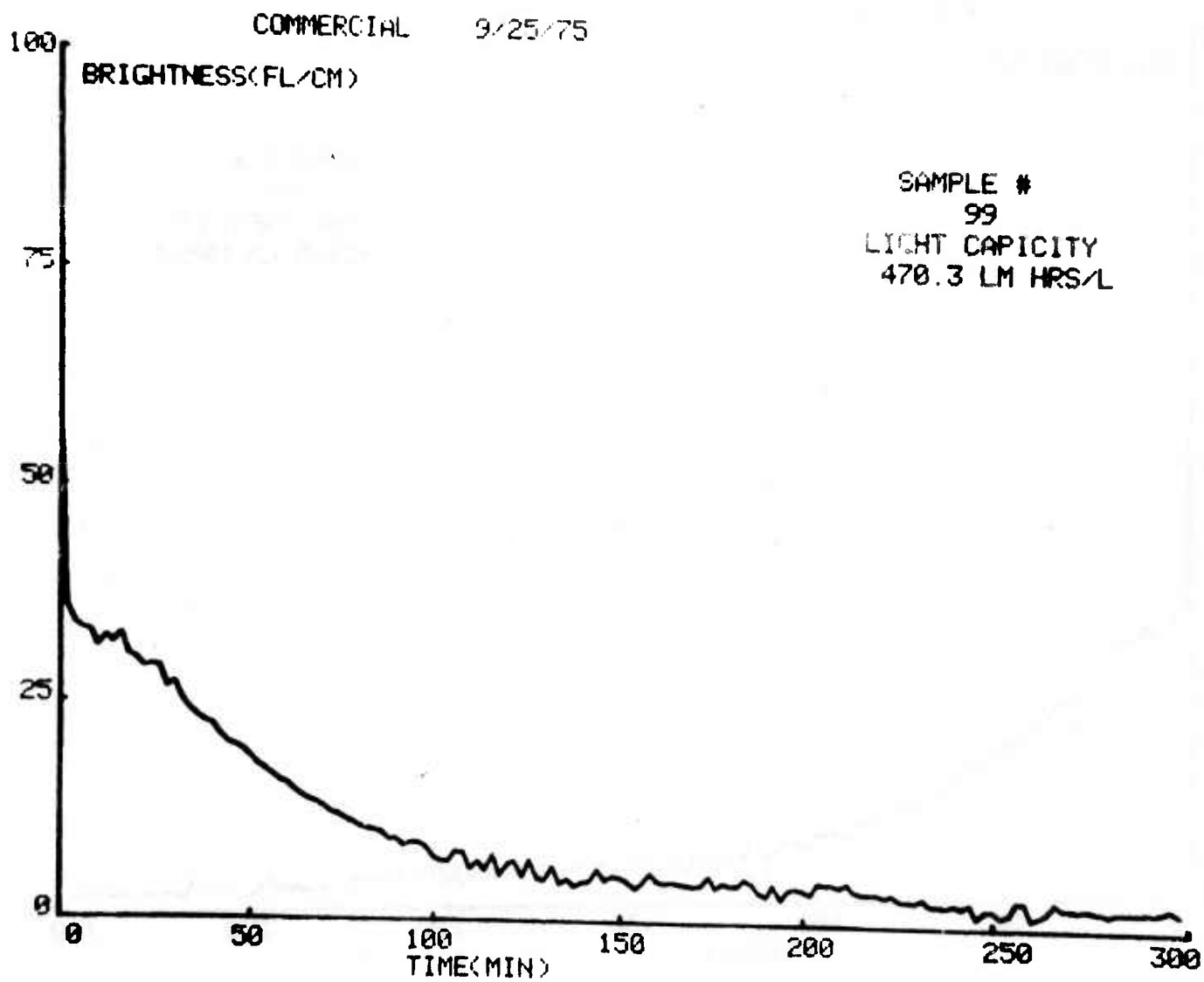


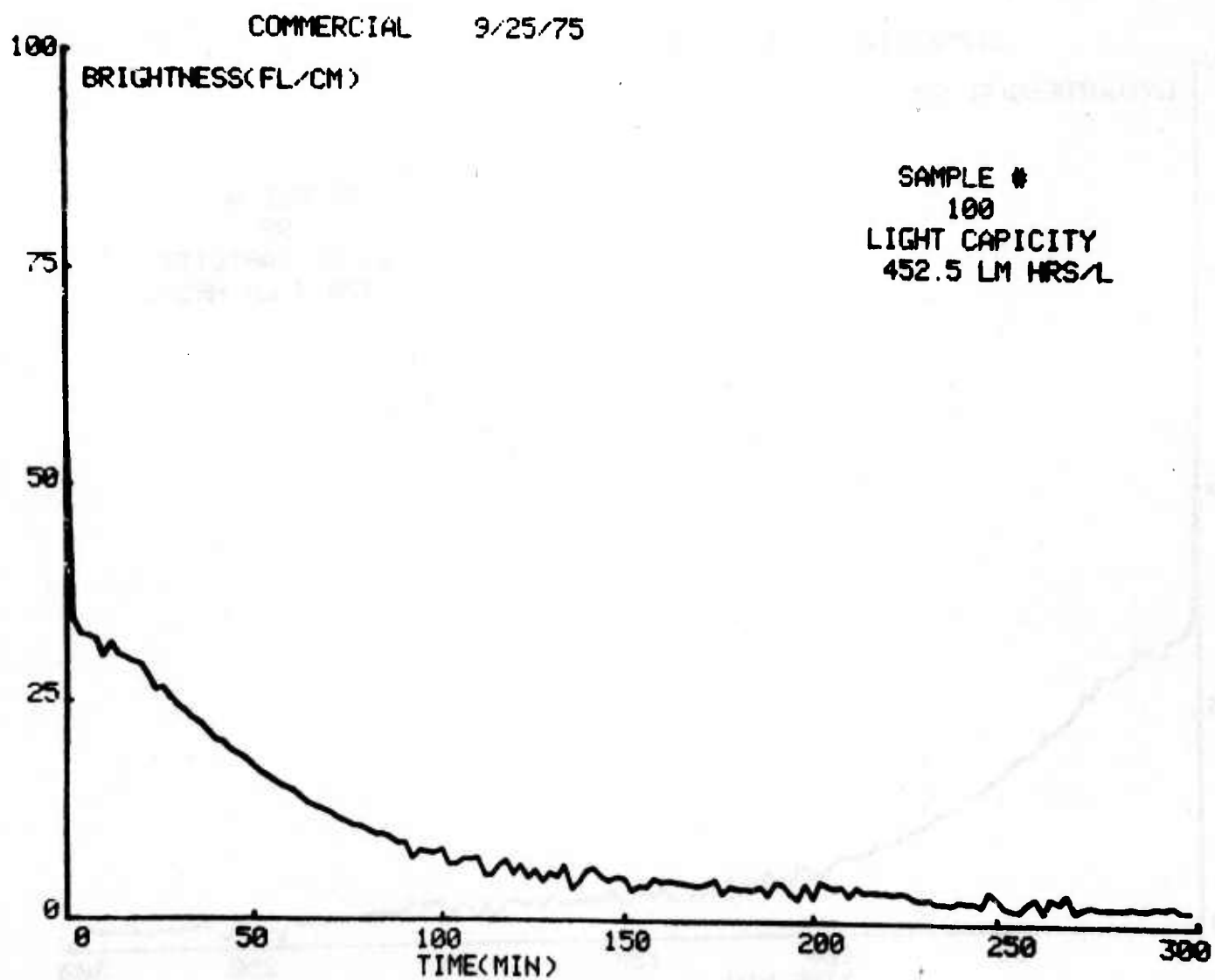












DOUBLE AMPULE - 14 DAY T & H - 9/16/75

SAMPLE#	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
1	34.5	16.7	9.1	5.1	3.6	3.0	2.5	2.0	1.8	2.2	1.8	1.8
2	29.7	16.4	8.7	5.1	3.7	2.9	2.7	2.2	2.0	2.2	1.9	2.1
3	6.3	15.6	7.9	4.9	3.0	2.9	3.0	2.2	1.9	1.6	1.5	1.9
4	31.3	17.2	8.9	4.8	3.8	3.4	3.1	2.6	2.3	2.4	2.0	2.1
5	35.1	19.7	10.1	5.7	4.2	3.8	3.3	2.7	2.4	2.6	2.1	1.9
6	33.1	18.6	10.4	4.7	3.9	3.3	2.5	2.4	1.9	2.0	1.6	1.5
7	33.1	19.1	10.2	5.8	4.3	3.7	3.0	2.7	2.3	2.4	2.1	2.2
8	31.3	17.2	8.8	5.1	3.8	3.1	2.7	2.4	2.3	2.1	1.9	2.1
9	33.6	18.7	9.6	5.8	4.3	3.7	3.2	2.6	2.4	2.4	2.1	2.0
10	30.8	17.0	9.2	5.0	3.8	3.5	3.0	2.2	2.1	2.6	2.0	1.8
11	32.8	17.6	9.6	5.6	4.3	3.6	3.1	2.5	2.2	2.5	2.2	1.7
12	28.6	16.1	8.8	5.3	3.8	3.2	2.7	2.5	1.8	2.2	1.9	1.7
16	31.9	17.7	9.0	5.3	3.9	3.2	2.5	2.6	2.1	2.1	1.9	2.0
17	23.9	13.7	6.8	4.1	3.0	2.5	1.9	1.6	1.6	1.5	1.4	1.4
18	30.5	14.8	7.3	4.4	3.4	3.1	2.8	1.8	1.8	2.1	1.6	1.5
19	28.5	16.5	8.5	5.5	3.8	2.6	2.1	1.3	1.4	1.5	1.3	1.3
20	27.4	16.6	8.6	5.1	3.8	3.1	2.7	2.4	1.8	2.0	1.9	1.3
21	27.0	14.9	8.2	4.7	3.1	2.4	2.1	1.7	1.1	1.6	1.4	1.5
22	30.2	15.5	8.0	4.7	3.5	2.9	2.8	2.3	2.1	2.2	1.7	1.6
23	35.0	20.2	10.8	5.9	4.2	3.6	3.0	2.6	2.3	2.3	2.1	2.0
24	34.5	19.6	9.9	5.7	4.3	3.7	3.1	2.4	2.4	2.4	2.1	2.1
25	27.6	15.7	9.0	4.9	3.5	2.7	2.2	1.7	1.6	2.0	1.5	2.0
26	30.2	17.1	9.8	5.7	4.1	3.1	2.4	2.0	1.5	1.6	1.5	1.6
27	33.7	17.9	9.6	5.6	4.0	3.3	2.8	2.5	2.0	2.3	2.0	1.9

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY (LM HRS/L)	EST TIME OUT (HRS)	PREDICTION EQUATION	
	AREA	AREA			A	B * X
1	1340.1	301.7	269.913	10.8	3.210	-0.004965
2	1342.0	331.0	274.021	11.1	3.217	-0.004809
3	1185.7	186.1	224.713	9.4	2.981	-0.005292
4	1392.7	410.0	295.274	12.1	3.240	-0.004458
5	1552.8	349.9	311.667	10.8	3.709	-0.005727
6	1428.1	99.2	250.168	7.4	4.050	-0.009086
7	1545.3	271.7	297.782	9.7	3.910	-0.006713
8	1379.4	278.0	271.487	10.2	3.463	-0.005666
9	1536.3	371.2	307.528	11.3	3.485	-0.005139
10	1393.2	335.1	283.907	11.0	3.379	-0.005122
11	1491.9	320.4	296.849	10.4	3.740	-0.005980
12	1342.2	412.7	287.457	12.5	3.048	-0.004074
16	1394.7	381.7	290.963	11.9	3.181	-0.004474
17	1076.3	287.5	223.390	12.2	2.237	-0.003058
18	1212.9	261.8	241.556	10.6	2.881	-0.004510
19	1224.8	905.4	348.934	27.8	1.606	-0.000961
20	1305.1	243.6	253.682	9.9	3.254	-0.005450
21	1155.8	392.6	253.630	14.6	2.050	-0.002335
22	1287.1	278.5	256.440	10.4	3.315	-0.005338
23	1553.4	332.0	308.839	10.7	3.577	-0.005556
24	1521.9	353.7	307.222	11.0	3.574	-0.005423
25	1242.2	582.4	298.873	17.4	2.178	-0.002082
26	1314.8	221.5	251.640	10.3	2.663	-0.004304
27	1457.1	322.8	291.543	10.7	3.518	-0.005488

DOUBLE AMPULE - 14 DAY T & H - 9/16/75

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY			
SAMPLE#	10 MIN	30 MIN	60 MIN
1	3172.	2433.	1881.
2	3143.	2389.	1873.
3	3074.	2283.	1850.
4	3209.	2406.	1827.
5	3396.	2553.	1983.
6	3318.	2578.	1803.
7	3352.	2558.	1997.
8	3212.	2395.	1873.
9	3325.	2496.	1990.
10	3194.	2449.	1868.
11	3241.	2491.	1962.
12	3116.	2395.	1911.
15	3248.	2427.	1911.
17	2910.	2131.	1694.
18	3008.	2212.	1762.
19	3150.	2361.	1940.
20	3157.	2372.	1873.
21	3016.	2317.	1803.
22	3067.	2294.	1883.
23	3432.	2622.	2004.
24	3392.	2527.	1969.
25	3082.	2427.	1850.
26	3201.	2517.	1983.
27	3262.	2491.	1962.

DOUBLE AMPULE - SALT SPRAY - 9/18/75

SAMPLE#	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
41	12.0	14.4	7.6	4.6	2.9	2.1	1.8	1.4	1.1	1.3	1.0	0.8
42	29.4	17.6	10.3	5.9	3.7	2.8	2.5	2.5	2.4	2.0	1.8	1.6
43	5.1	22.5	12.0	8.1	4.3	3.1	3.1	2.6	2.6	2.3	2.0	1.6
44	29.6	18.1	10.2	6.0	4.4	3.8	3.1	2.8	2.7	2.6	2.1	1.8
45	30.0	20.6	11.5	7.0	4.7	4.1	3.5	2.8	2.8	2.7	2.2	2.1
46	12.5	19.6	9.4	5.8	3.9	3.6	3.1	2.2	2.2	2.2	1.8	1.5
47	29.8	19.0	11.2	6.7	4.9	3.7	3.5	3.0	2.4	2.6	2.1	1.8
48	28.0	17.4	10.3	5.8	4.3	3.5	3.0	2.6	2.6	2.2	2.1	1.7
49	30.0	20.2	11.9	7.1	5.0	4.2	3.4	3.0	2.8	2.7	2.2	1.8
50	30.1	17.9	10.2	6.3	4.6	3.7	3.5	2.8	2.6	2.6	2.0	1.8
51	27.1	17.5	9.8	5.8	4.3	3.4	3.1	2.5	2.1	2.5	1.9	1.6
52	26.1	16.6	9.3	5.7	4.3	3.2	2.9	2.2	2.7	2.4	1.9	1.6
53	33.3	17.2	9.8	5.7	4.0	3.2	2.9	2.3	2.6	2.1	1.9	1.5
54	22.7	16.2	10.6	5.8	4.0	3.1	2.7	2.3	2.3	2.1	1.4	1.3
55	24.7	12.1	7.0	4.5	3.6	2.5	2.1	1.6	1.7	1.9	1.1	1.0
56	26.7	16.1	8.9	5.5	4.4	3.4	2.9	2.4	2.3	2.6	2.1	1.7
57	28.3	16.6	9.4	4.6	3.4	2.4	2.1	1.7	2.0	1.5	1.4	1.0
58	26.8	16.8	9.0	5.3	4.1	3.2	3.1	2.6	2.6	2.2	2.1	1.7
59	30.5	20.2	11.4	6.8	4.9	4.1	3.4	2.8	2.8	2.4	2.1	1.6
60	27.2	17.7	9.4	5.9	4.4	3.6	3.1	2.3	2.6	2.1	2.1	1.6
61	29.3	19.1	10.9	6.3	4.7	3.9	3.1	3.0	2.7	2.7	2.1	1.7
62	27.4	15.9	8.6	5.3	3.8	3.1	3.1	2.5	2.3	2.4	1.9	1.6
63	30.1	19.0	10.6	6.3	4.7	3.7	3.5	2.8	2.8	2.6	2.2	1.9
64	24.6	15.8	9.7	5.6	3.8	3.1	2.6	2.1	1.9	2.0	1.6	1.3

SAMPLE#	MEASURED	PREDICTED	LIGHT CAPACITY	EST TIME	PREDICTION EQUATION	
	AREA	AREA	(LM HRS/L)	OUT (HRS)	A	B * X
41	1432.4	112.5	187.533	8.7	2.322	-0.004438
42	1396.2	238.6	267.771	9.8	3.387	-0.005790
43	1512.7	180.7	277.388	8.4	4.310	-0.008560
44	1535.5	221.4	287.781	8.7	4.533	-0.008645
45	1681.1	277.5	320.814	9.4	4.359	-0.007692
46	1412.6	179.7	260.853	8.6	3.862	-0.007462
47	1626.8	207.8	300.511	8.5	4.703	-0.009215
48	1449.7	261.0	286.760	9.6	3.946	-0.006880
49	1668.2	231.8	311.211	8.8	4.614	-0.008731
50	1547.3	186.9	284.064	8.3	4.667	-0.009378
51	1429.8	204.6	267.706	8.8	4.060	-0.007676
52	1426.7	208.5	267.842	8.8	4.156	-0.007868
53	1423.4	217.0	268.692	9.0	3.946	-0.007277
54	1379.5	98.8	242.139	7.3	4.394	-0.010023
55	1032.6	95.3	184.761	7.8	3.030	-0.006448
56	1420.6	217.5	268.327	8.8	4.278	-0.008068
57	1160.8	111.4	208.399	8.2	2.843	-0.005743
58	1404.3	241.0	269.500	9.4	3.859	-0.006851
59	1647.0	175.0	298.437	8.2	4.652	-0.009494
60	1481.8	222.5	279.159	8.9	4.210	-0.007853
61	1512.8	198.5	296.697	8.4	4.812	-0.009595
62	1375.4	234.6	263.728	9.3	3.864	-0.006920
63	1597.7	273.6	306.518	9.4	4.333	-0.007667
64	1271.7	132.5	230.008	8.0	3.807	-0.007915

DOUBLE AMPULE - SALT SPRAY - 9/16/75

ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

SAMPLE#	10 MIN	30 MIN	60 MIN
41	2972.	2242.	1787.
42	3241.	2593.	2004.
43	3592.	2753.	2306.
44	3280.	2558.	2025.
45	3484.	2698.	2163.
46	3392.	2476.	1990.
47	3349.	2665.	2118.
48	3227.	2568.	1997.
49	3432.	2740.	2175.
50	3266.	2558.	2066.
51	3230.	2512.	1990.
52	3157.	2460.	1976.
53	3205.	2517.	1969.
54	3131.	2603.	1990.
55	2762.	2163.	1770.
56	3120.	2417.	1948.
57	3157.	2476.	1795.
58	3180.	2427.	1918.
59	3435.	2689.	2137.
60	3245.	2476.	2011.
61	3355.	2637.	2072.
62	3101.	2395.	1911.
63	3345.	2607.	2072.
64	3097.	2507.	1955.

DOUBLE AMPULE CONTROL

9/17/75

SAMPLE #	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
65	29.5	16.6	8.5	4.4	4.3	3.9	3.4	2.6	2.4	2.1	2.1	1.8
66	24.3	12.4	7.1	3.6	3.8	3.2	2.6	2.0	2.2	1.3	1.6	1.5
67	19.5	18.5	9.1	4.8	4.3	3.8	3.3	2.5	2.7	2.2	2.1	1.9
68	24.2	15.1	7.9	4.5	4.0	3.7	3.2	2.4	2.3	2.2	1.9	1.6
69	31.1	21.0	11.4	6.2	5.1	4.4	3.9	3.2	3.0	2.8	2.6	2.2
70	25.8	15.8	8.2	4.5	4.2	3.9	3.6	2.7	2.3	2.1	2.1	1.6
71	25.7	15.8	8.3	4.2	4.0	3.7	3.1	2.6	2.3	2.0	2.0	1.7
72	24.0	17.1	9.9	4.2	3.7	3.0	2.6	1.8	2.2	1.6	1.6	1.2
73	27.6	17.1	9.0	5.1	4.5	4.0	3.4	2.6	2.9	2.3	2.2	1.9
74	25.3	15.5	7.9	4.3	3.7	3.4	3.0	2.3	2.3	2.0	2.0	1.6
75	22.8	14.1	8.3	4.1	3.8	3.3	2.7	2.1	1.9	1.5	1.6	1.3
76	26.9	17.4	9.4	4.8	4.4	4.0	3.4	2.7	2.2	2.0	2.1	1.9
77	27.2	15.5	7.9	4.2	4.0	3.7	3.1	2.5	2.2	2.2	2.0	1.5
78	26.9	15.6	8.2	4.6	4.2	3.8	3.2	2.6	2.6	2.4	2.1	1.7
79	27.2	16.0	8.9	5.0	4.5	4.0	3.4	2.6	2.7	2.4	2.2	2.0
80	29.9	14.4	7.0	4.0	3.8	3.2	2.8	2.2	2.0	1.8	1.8	1.7
81	25.6	14.7	7.7	4.4	3.9	3.5	3.0	2.5	2.1	2.0	1.9	1.9
82	28.3	15.0	7.6	4.4	3.9	3.6	3.0	2.4	2.1	1.9	1.8	1.8
83	28.4	15.1	7.5	3.8	3.4	3.3	2.6	2.2	1.9	1.7	1.7	1.6
84	19.9	14.5	7.1	3.2	3.2	2.9	2.4	2.0	1.6	1.4	1.6	1.3
85	20.5	16.7	8.5	5.2	4.1	3.7	3.1	2.6	2.2	1.9	1.8	1.6
86	21.4	14.6	7.3	4.8	3.7	3.3	2.9	2.5	2.2	1.8	1.8	1.6
87	21.5	13.0	7.3	5.2	3.5	2.9	2.5	1.9	1.6	1.5	1.2	1.0
88	27.8	15.6	8.2	5.5	4.2	3.7	3.2	2.8	2.4	2.1	2.0	1.7

SAMPLE #	MEASURED	PREDICTED	LIGHT CAPACITY	EST TIME	PREDICTION EQUATION	
	AREA	AREA	(LM HRS/L)	OUT (HRS)	A	+ B * X
65	1445.6	302.6	286.380	10.2	3.711	-0.006039
66	1130.1	212.5	219.918	9.8	2.955	-0.005015
67	1423.3	259.7	275.664	9.7	3.715	-0.006366
68	1341.1	191.1	250.972	8.8	3.743	-0.007050
69	1535.8	275.9	322.953	9.1	4.967	-0.009133
70	1401.3	247.7	270.115	9.5	3.795	-0.006645
71	1351.7	303.0	272.680	10.6	3.385	-0.005329
72	1289.7	159.9	237.269	8.9	3.082	-0.005781
73	1487.2	268.9	287.642	9.6	3.959	-0.006846
74	1319.7	272.0	260.723	10.2	3.338	-0.005432
75	1231.8	86.9	215.840	7.3	3.751	-0.008505
76	1488.1	304.0	293.536	10.3	3.674	-0.005949
77	1343.3	202.7	253.236	9.0	3.745	-0.006938
78	1381.1	275.7	271.371	10.0	3.605	-0.005996
79	1465.6	323.0	292.977	10.5	3.727	-0.005935
80	1230.5	216.7	238.029	9.7	3.141	-0.005405
81	1305.6	215.6	249.172	9.3	3.523	-0.006294
82	1302.1	183.9	243.405	8.9	3.553	-0.006668
83	1217.2	270.4	243.667	10.9	2.790	-0.004265
84	1080.2	740.2	298.187	22.3	1.826	-0.001362
85	1341.0	261.8	262.645	10.1	3.341	-0.005510
86	1248.0	289.5	251.847	10.7	3.130	-0.004868
87	1116.3	105.5	200.133	8.1	2.843	-0.005821
88	1392.1	260.9	270.767	9.8	3.691	-0.006301



DOUBLE AMPULE CONTROL 9/17/75

SAMPLE#	10 MIN	30 MIN	60 MIN
65	3161.	2361.	1762.
66	2785.	2175.	1601.
67	3308.	2433.	1827.
68	3031.	2288.	1779.
69	3490.	2684.	2046.
70	3097.	2323.	1770.
71	3094.	2334.	1720.
72	3198.	2522.	1729.
73	3198.	2427.	1881.
74	3067.	2263.	1746.
75	2943.	2334.	1694.
76	3227.	2465.	1835.
77	3070.	2288.	1712.
78	3074.	2323.	1787.
79	3113.	2411.	1866.
80	2972.	2169.	1677.
81	3000.	2253.	1782.
82	3028.	2248.	1762.
83	3035.	2230.	1650.
84	2984.	2181.	1527.
85	3165.	2361.	1896.
86	2988.	2212.	1835.
87	2846.	2212.	1889.
88	3078.	2323.	1940.



CELL AMPULF 9/25/75

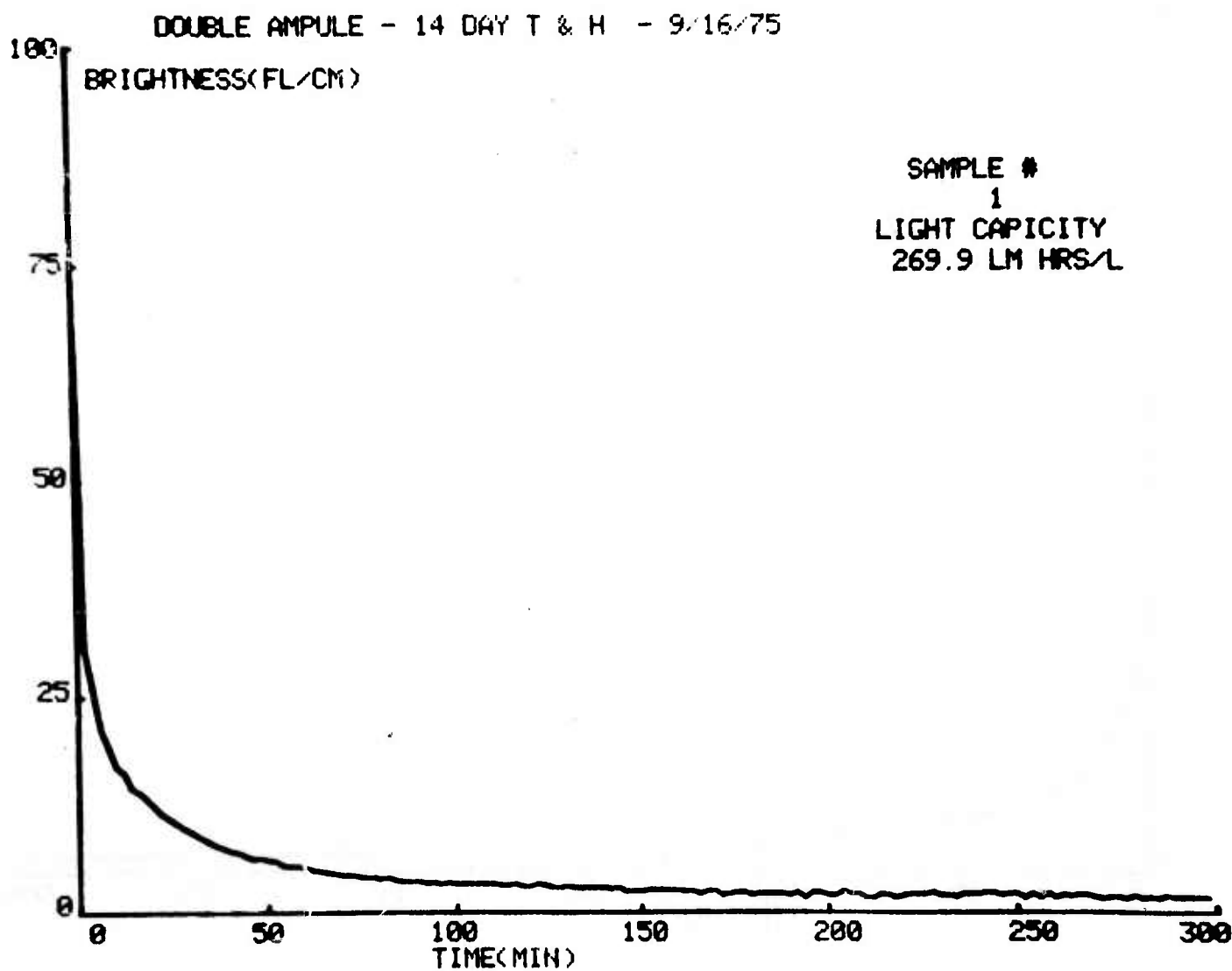
SAMPLE #	INTENSITY (FL/CM) VS TIME (MIN)											
	2	10	30	60	90	120	150	180	210	240	270	298
89	10.6	5.2	2.1	0.7	1.2	1.6	0.1	0.0	0.0	1.0	0.0	1.5
90	41.6	24.3	10.9	5.3	5.2	4.4	3.1	2.7	2.6	1.9	0.8	2.6
91	38.6	22.0	9.4	5.2	4.7	3.4	3.0	2.6	3.2	0.3	0.6	0.9
92	7.9	21.2	9.3	5.8	4.2	4.5	2.4	2.1	2.0	0.5	1.0	0.4
93	35.5	20.0	9.8	5.7	4.6	5.0	3.0	2.5	1.6	1.6	2.9	1.0
94	34.5	21.0	9.7	4.6	4.5	4.5	2.7	4.6	1.4	1.9	2.3	2.9
95	33.0	16.5	10.0	4.3	3.7	2.5	1.7	3.1	0.9	2.5	0.7	1.1
96	37.7	21.7	9.9	6.1	4.5	3.7	2.5	2.6	2.2	2.2	0.2	0.5
97	11.5	19.9	10.5	6.3	5.6	5.5	3.1	1.9	2.9	1.2	0.4	0.5
98	31.0	21.9	9.0	4.1	4.3	4.7	2.7	1.9	2.0	1.2	2.1	1.2
99	37.3	21.4	10.1	4.9	4.7	4.0	2.8	2.2	1.0	1.6	2.2	3.0
100	15.0	27.5	11.6	6.8	4.7	3.4	2.6	1.9	1.0	2.1	1.5	1.9
13	43.6	20.8	9.4	5.0	4.7	5.0	2.6	3.9	3.4	1.8	0.8	0.8
14	33.5	21.4	10.3	4.0	3.6	3.8	2.1	3.5	2.2	0.3	0.0	0.5
15	41.0	19.8	8.7	4.3	4.2	4.0	2.5	2.7	0.8	1.1	0.7	2.7
28	44.8	24.3	11.2	5.8	3.7	2.8	2.1	0.8	1.0	2.1	2.3	0.0
29	43.6	22.1	9.5	4.9	4.4	3.8	2.6	1.7	2.1	1.5	1.4	0.4
30	33.0	22.8	9.4	4.9	4.1	4.2	2.0	1.4	0.8	0.5	0.0	0.4

SAMPLE #	MEASURED AREA	PREDICTED AREA	LIGHT CAPACITY (LM HRS/L)	EST TIME OUT (HRS)	PREDICTION EQUATION	
					A + B * X	
89	350.7	1.0	59.014	5.5	1.186	-0.003618
90	711.5	104.5	297.288	7.2	4.932	-0.011377
91	560.3	45.3	266.223	6.3	5.621	-0.014956
92	1011.0	31.0	219.328	6.1	5.288	-0.014555
93	1500.3	72.1	268.368	6.7	5.505	-0.013749
94	1020.4	70.5	263.111	6.9	5.049	-0.012258
95	1280.1	25.5	214.355	6.1	4.213	-0.011559
96	1430.0	28.5	241.440	6.0	5.423	-0.015088
97	1431.0	14.5	236.898	5.6	6.504	-0.019317
98	1380.7	78.5	239.989	7.0	4.290	-0.010160
99	1701.5	149.6	280.269	8.2	3.907	-0.007939
100	1000.4	61.7	265.771	6.7	4.824	-0.012089
13	1442.7	32.7	248.231	6.1	5.340	-0.014636
14	1252.7	5.0	210.916	5.4	5.218	-0.016164
15	1420.3	43.6	240.598	6.3	4.934	-0.012989
28	710.0	25.2	252.516	6.0	4.325	-0.011914
29	1432.0	34.1	248.479	6.2	4.822	-0.013019
30	1007.7	22.1	226.328	6.1	3.648	-0.010012

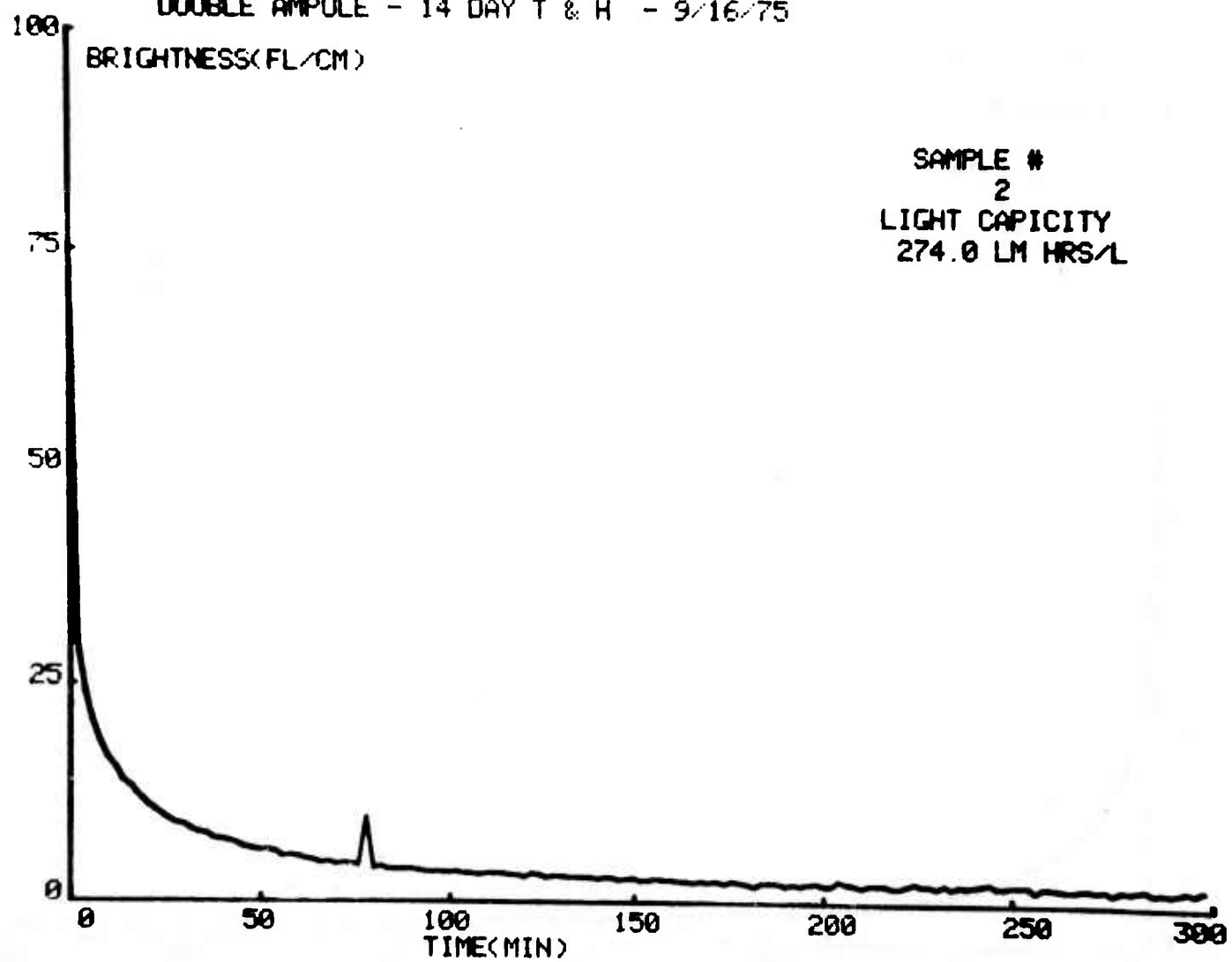
DOUBLE AMPULE 9/25/75

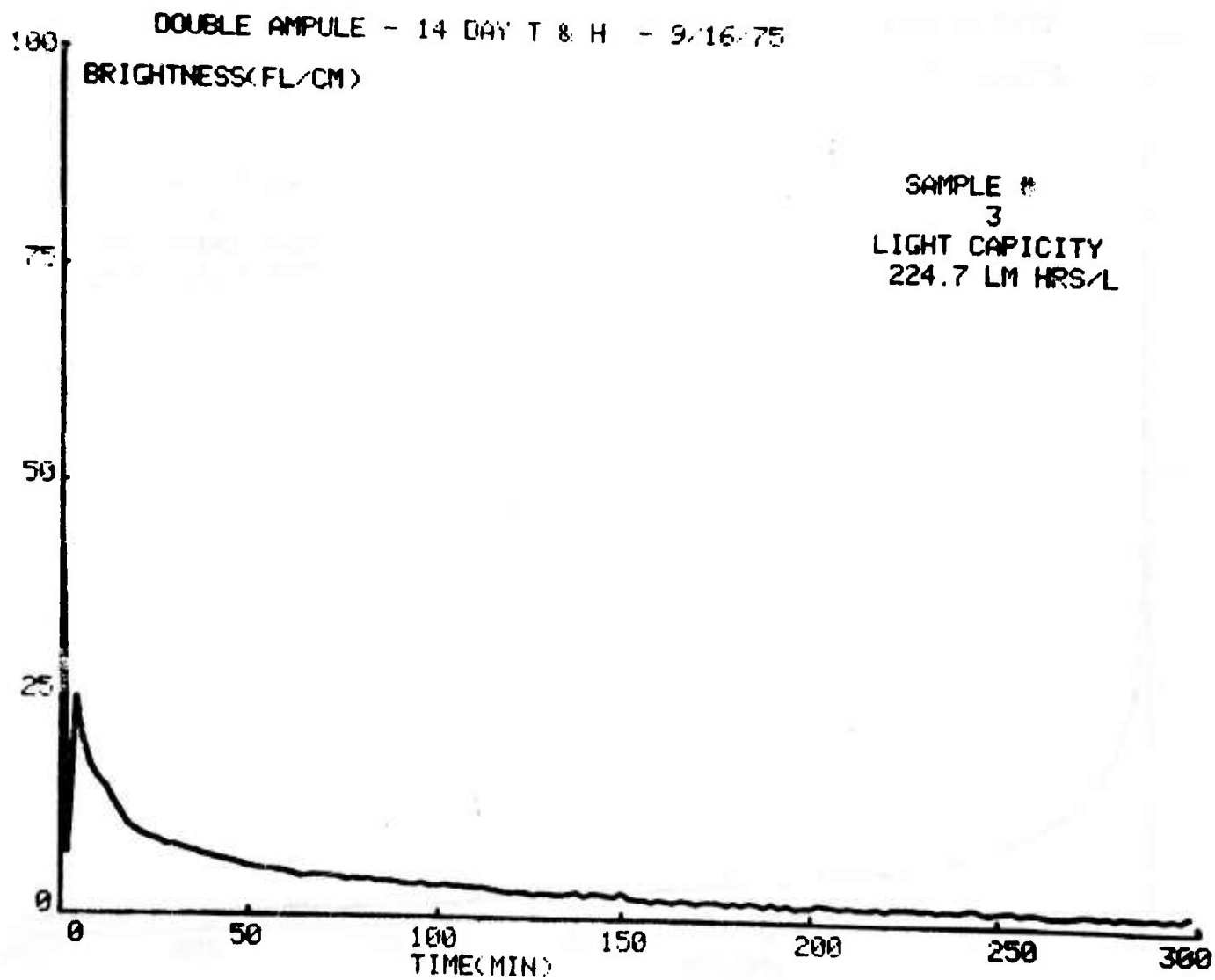
ESTIMATED SIGHTING RANGE AT 5 MI VISIBILITY

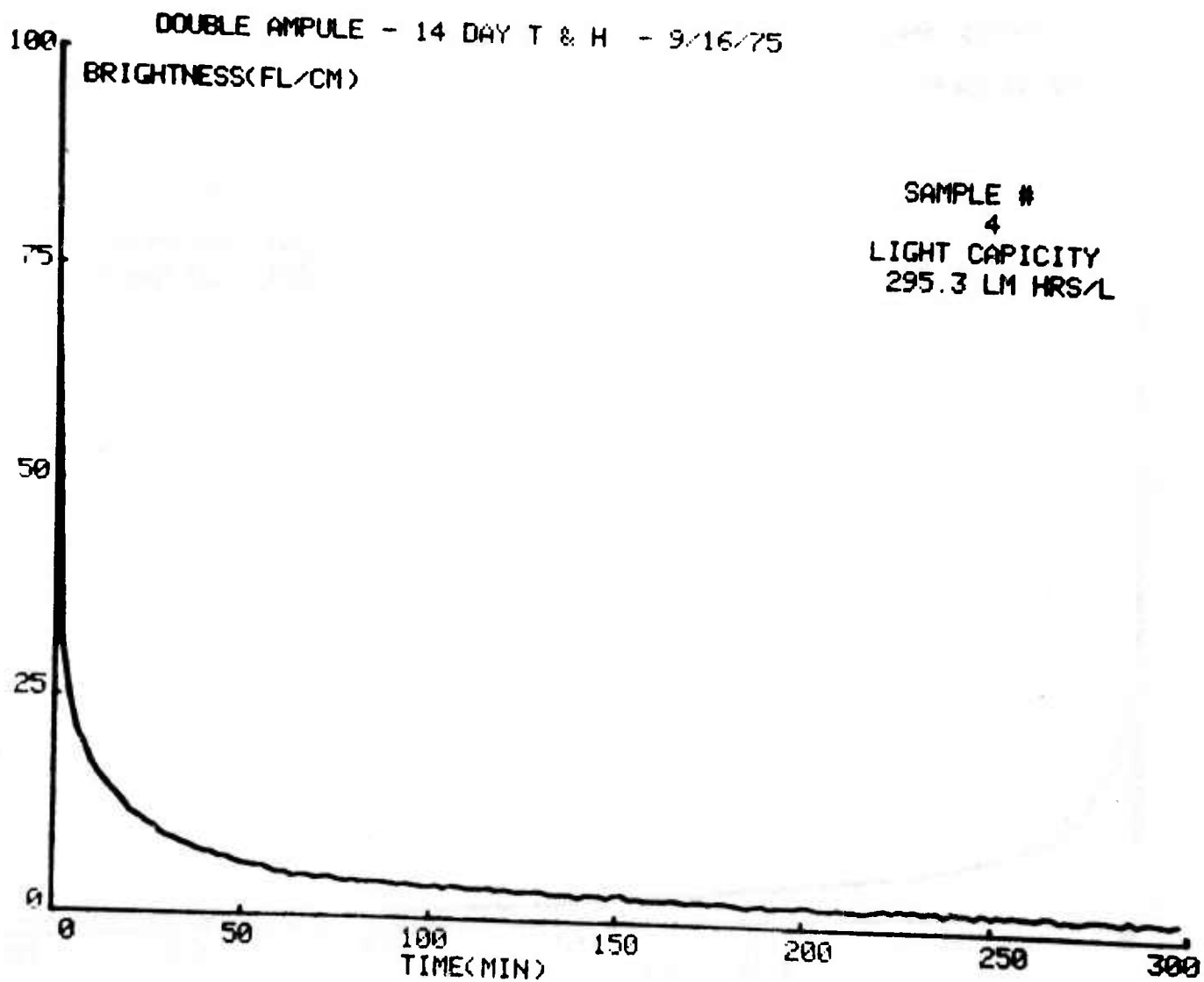
SAMPLE#	10 MIN	30 MIN	60 MIN
80	1896.	1261.	733.
90	3711.	2632.	1918.
91	3559.	2512.	1889.
92	3506.	2454.	1997.
93	3480.	2512.	1969.
94	3493.	2502.	1787.
95	3150.	2538.	1746.
96	3537.	2527.	2039.
97	3415.	2593.	2066.
98	3549.	2422.	1703.
99	3518.	2553.	1850.
100	3902.	2712.	2131.
13	3477.	2470.	1866.
14	3518.	2573.	1787.
15	3402.	2389.	1737.
20	3711.	2670.	1990.
25	3508.	2481.	1850.
30	3614.	2465.	1843.

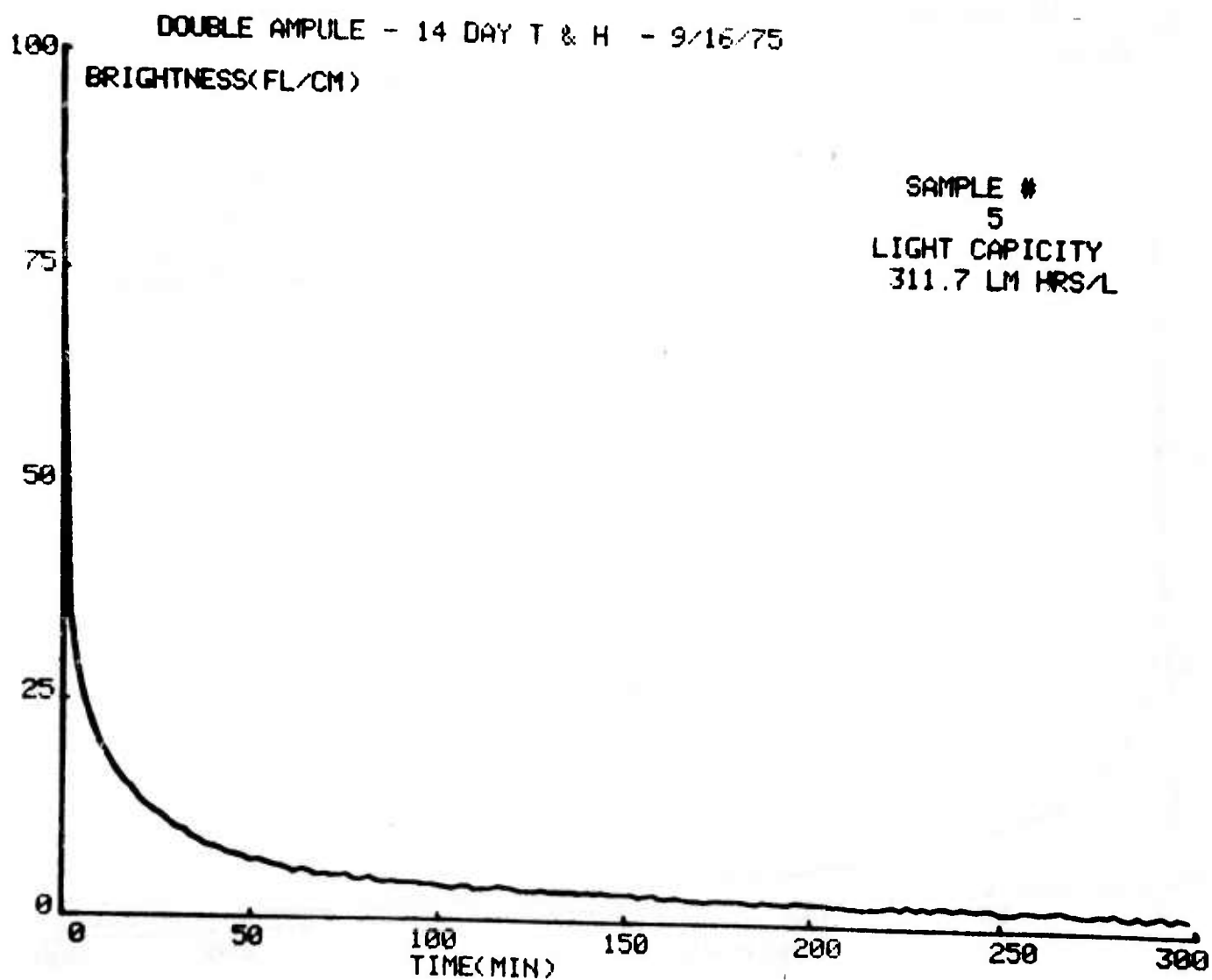


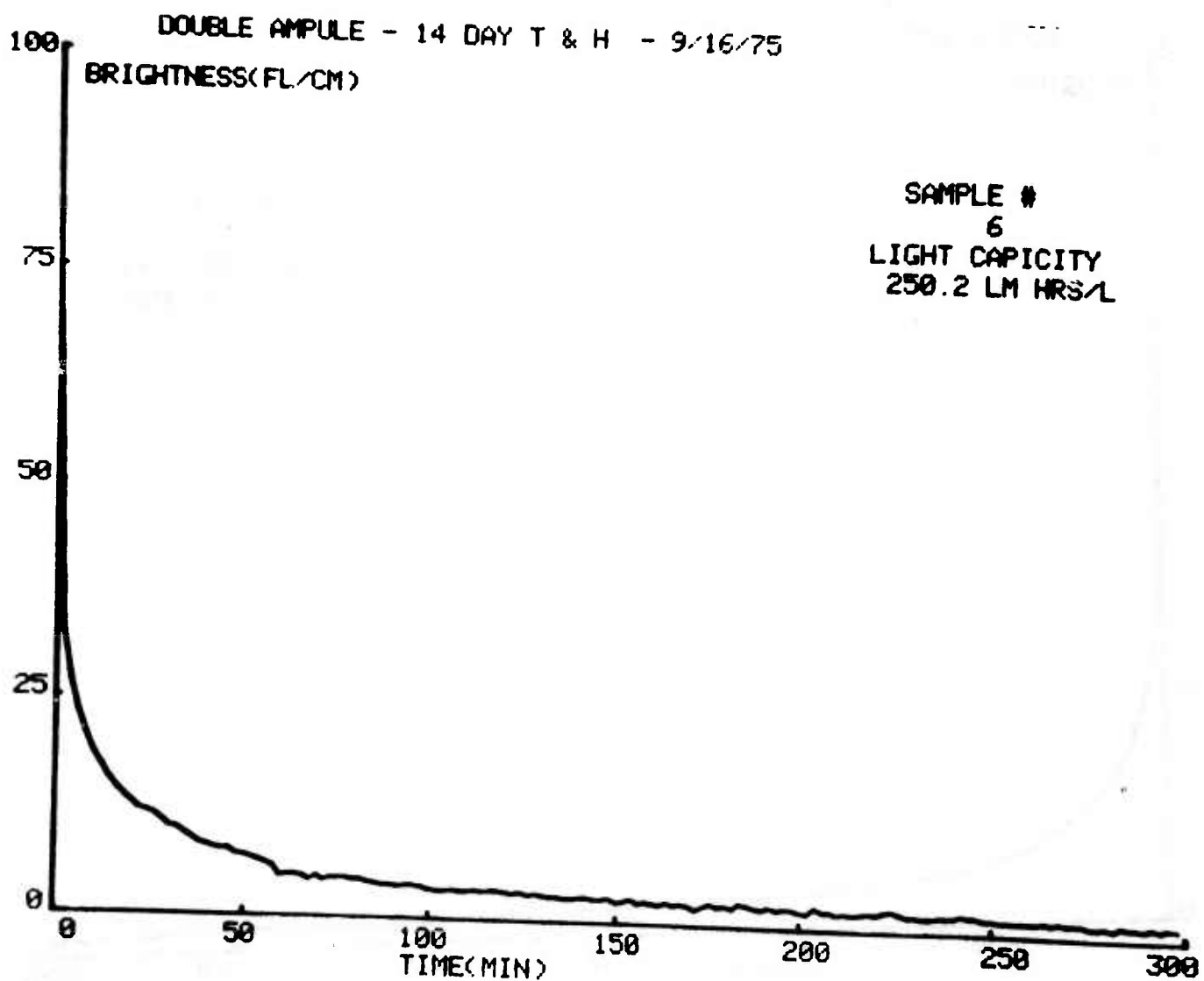
DOUBLE AMPULE - 14 DAY T & H - 9/16/75



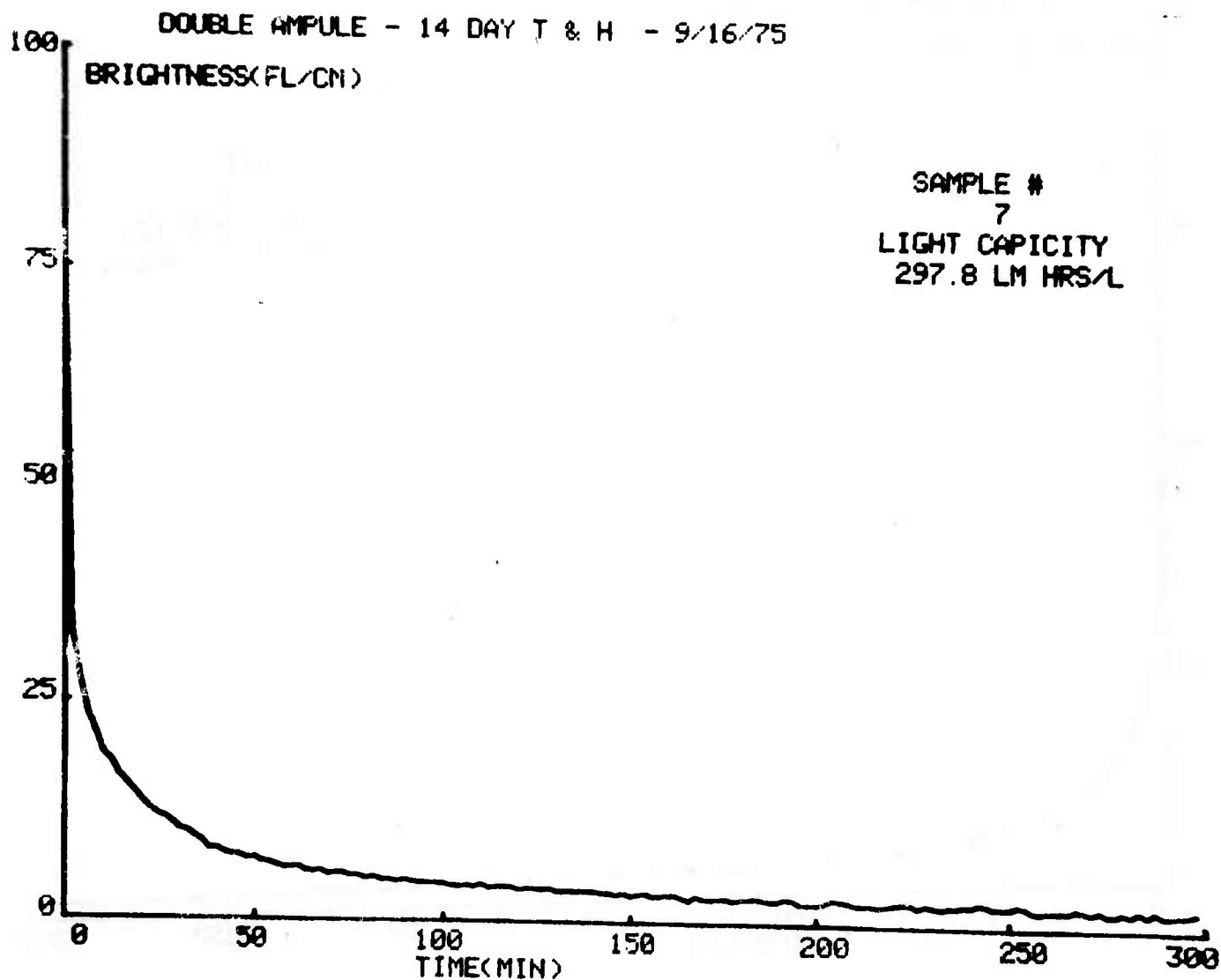


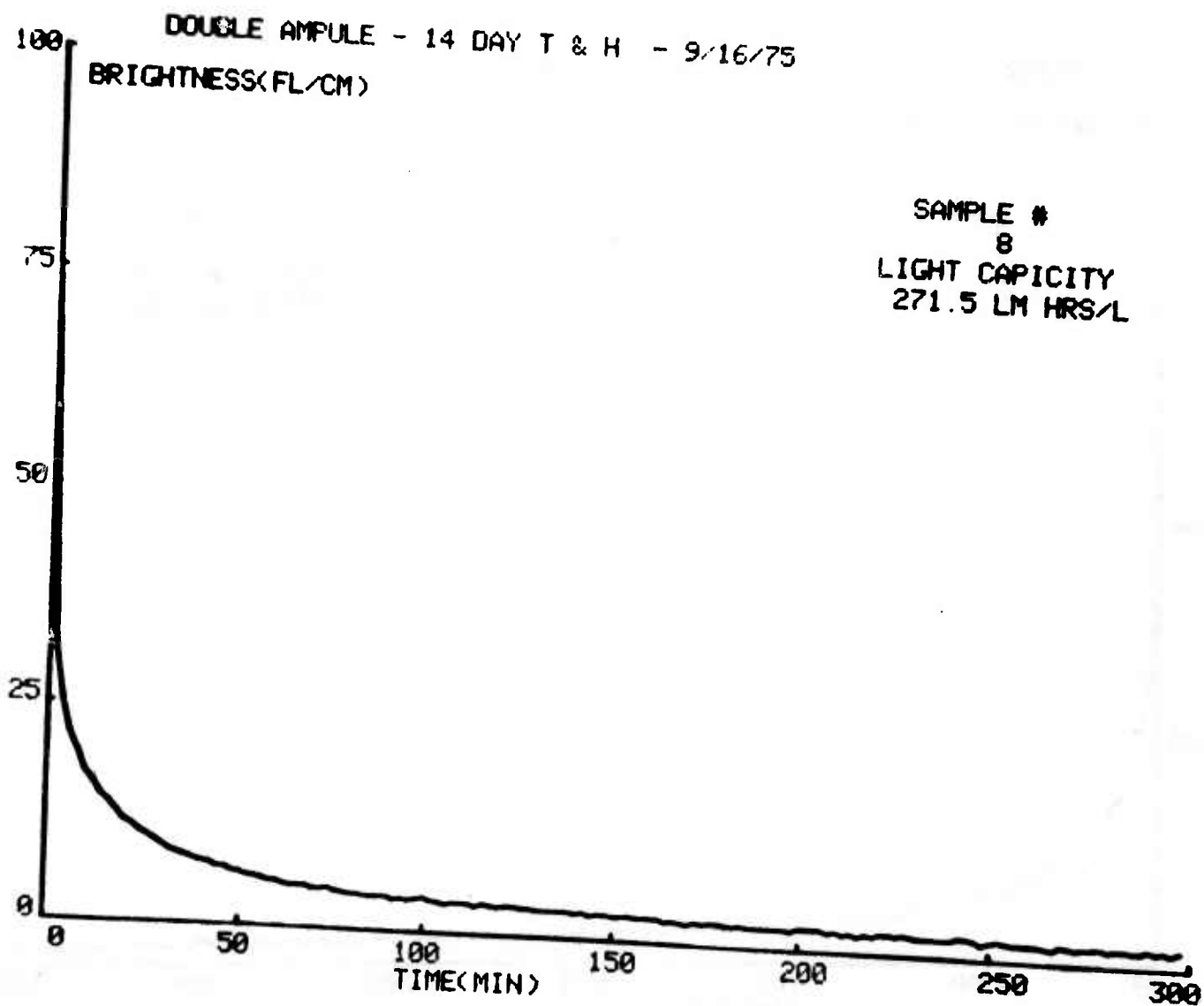


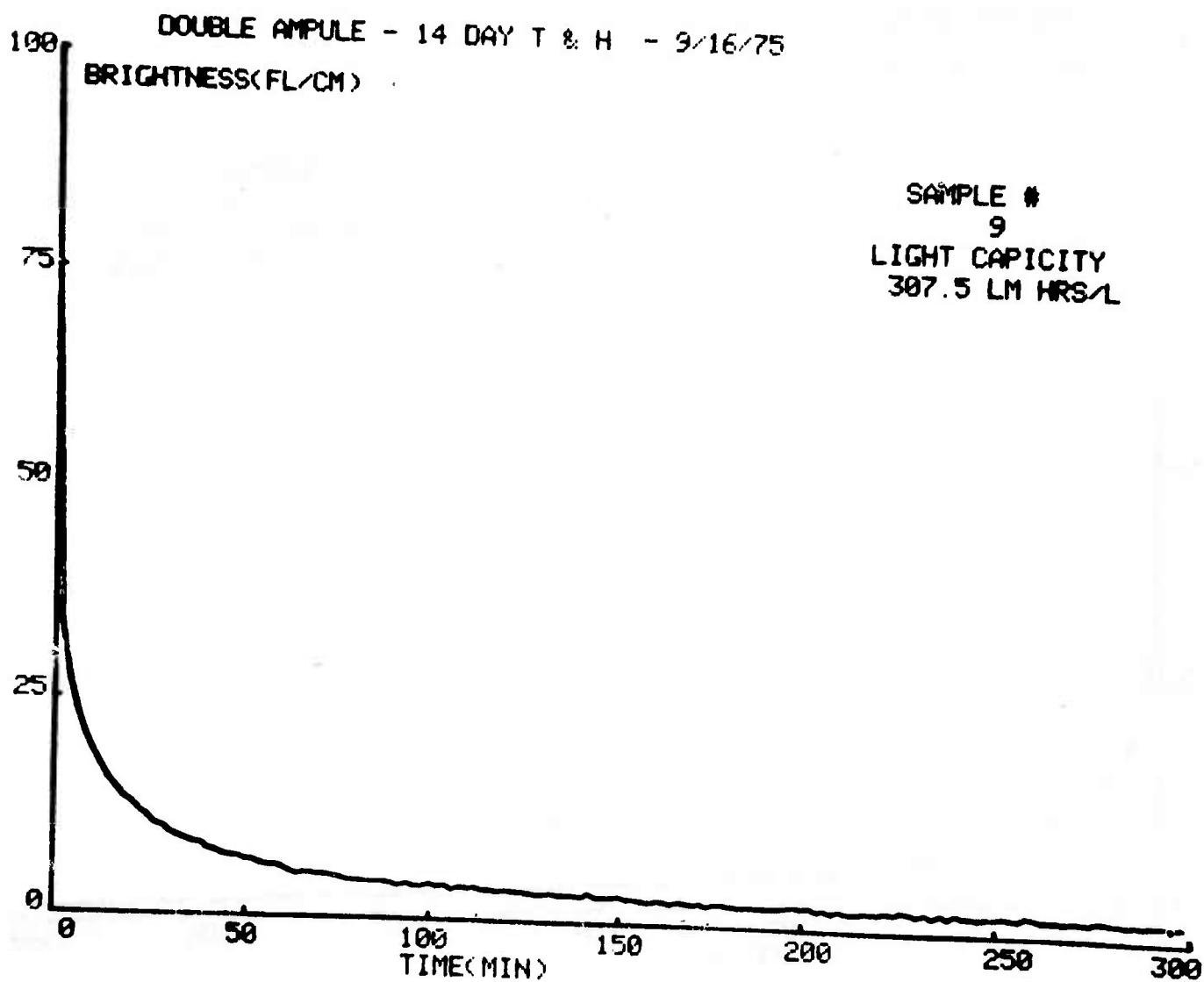


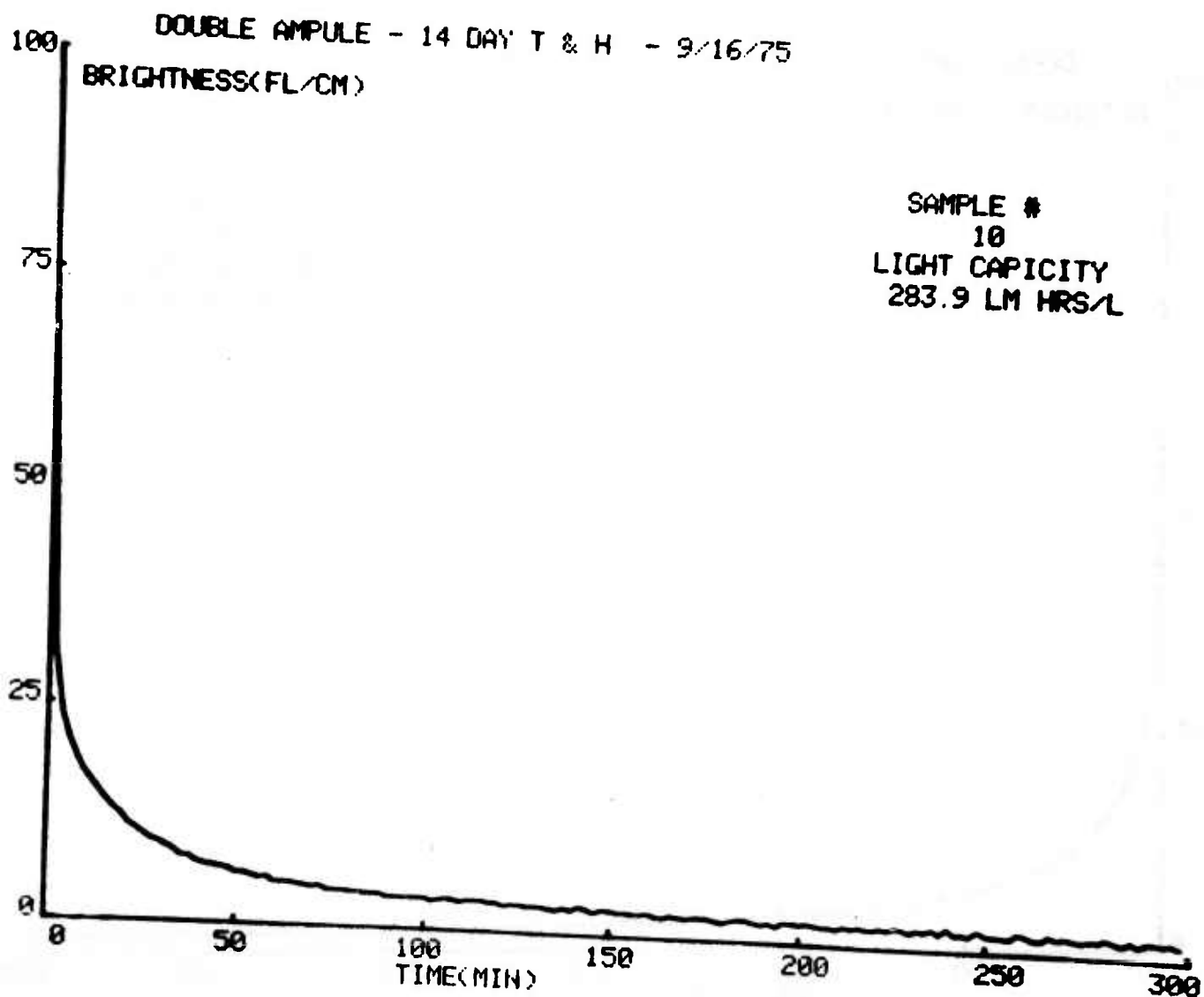


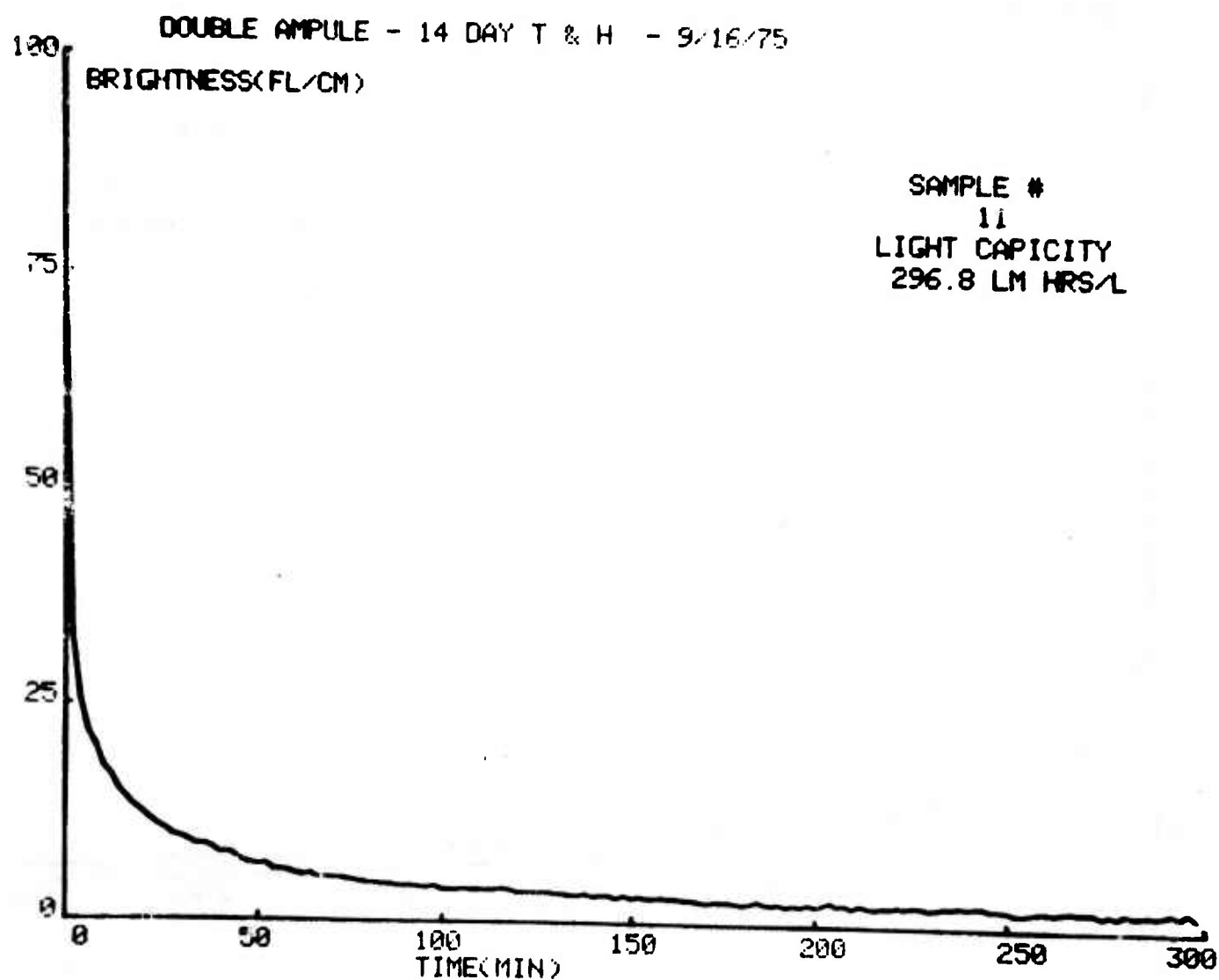


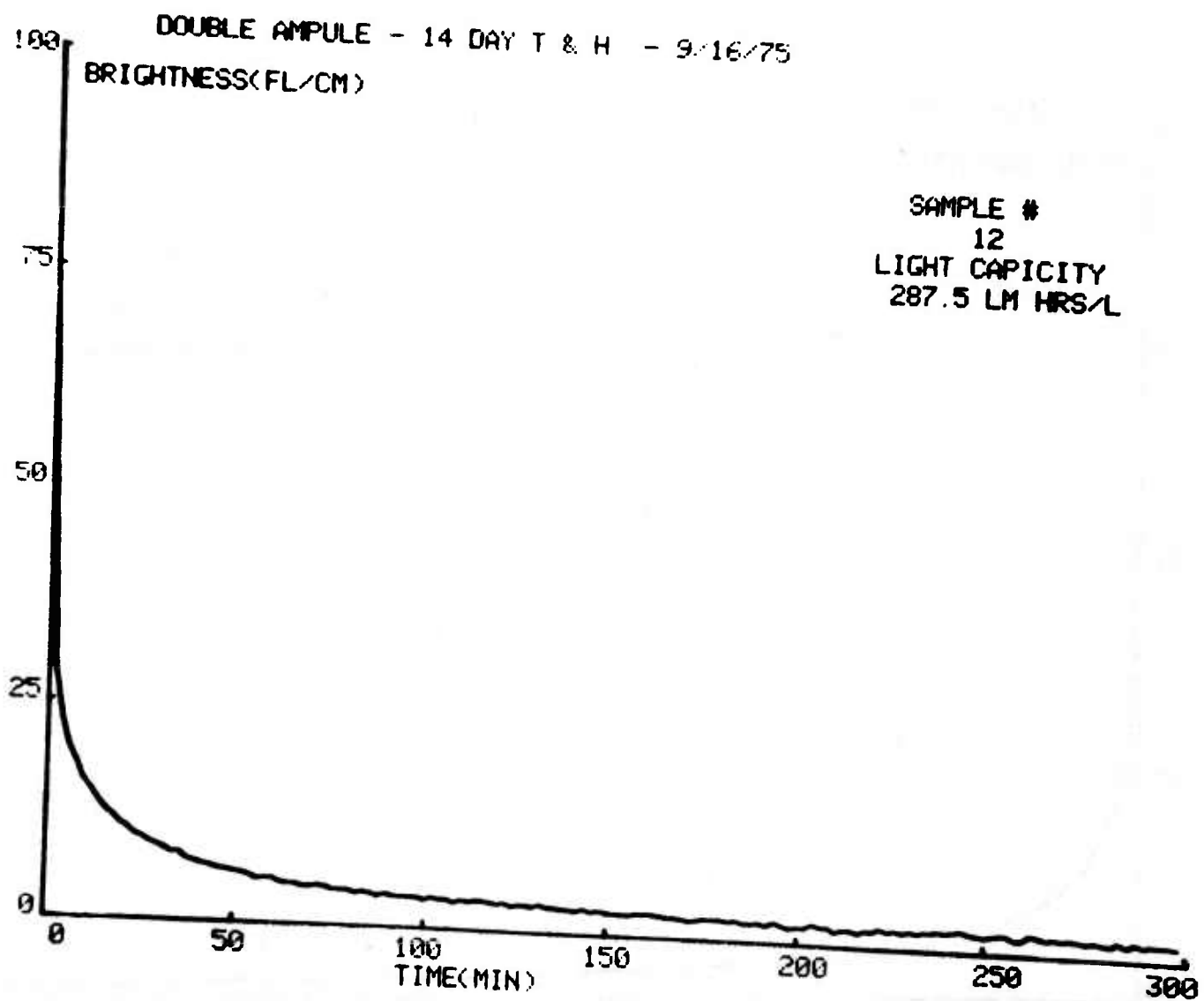


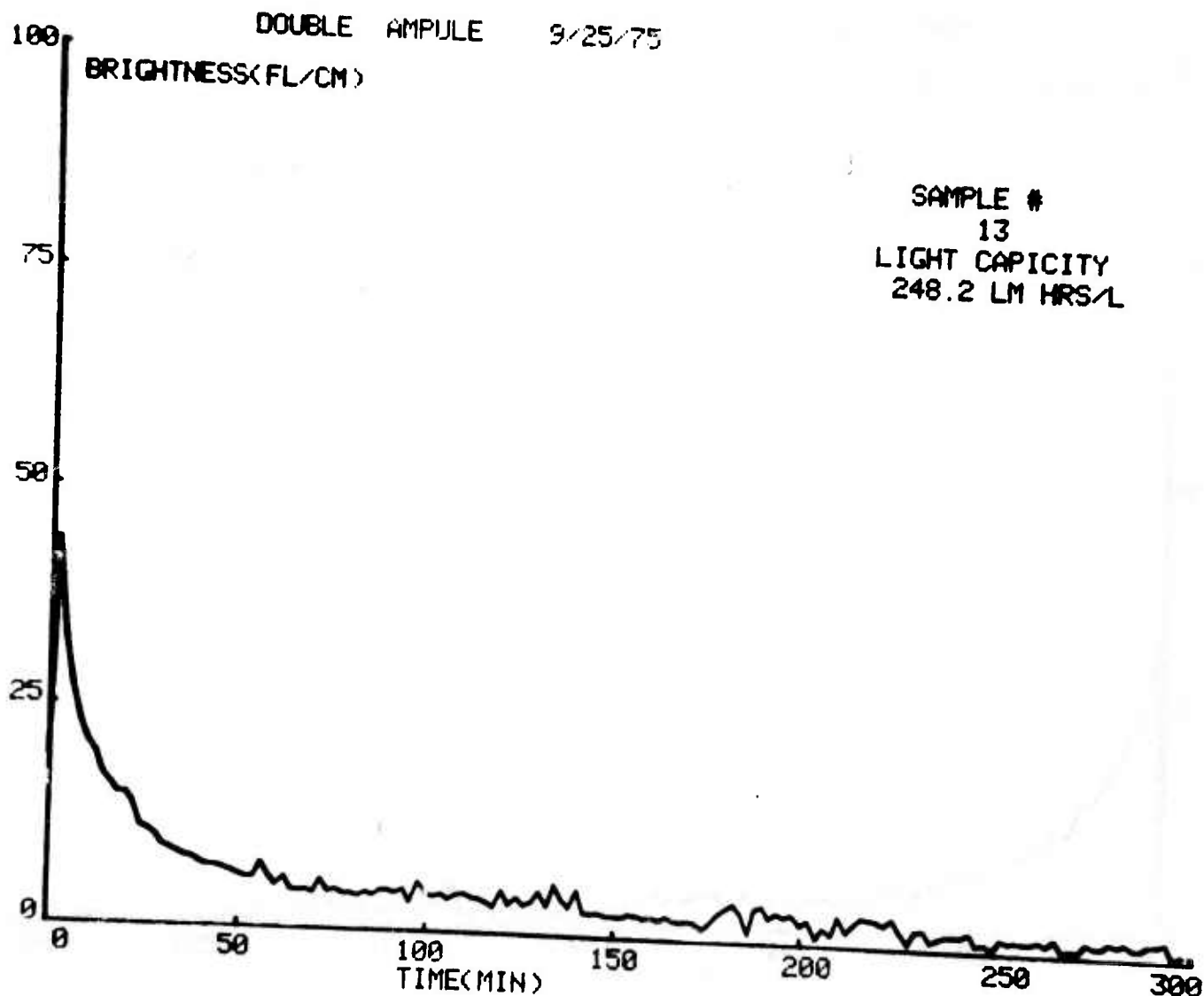




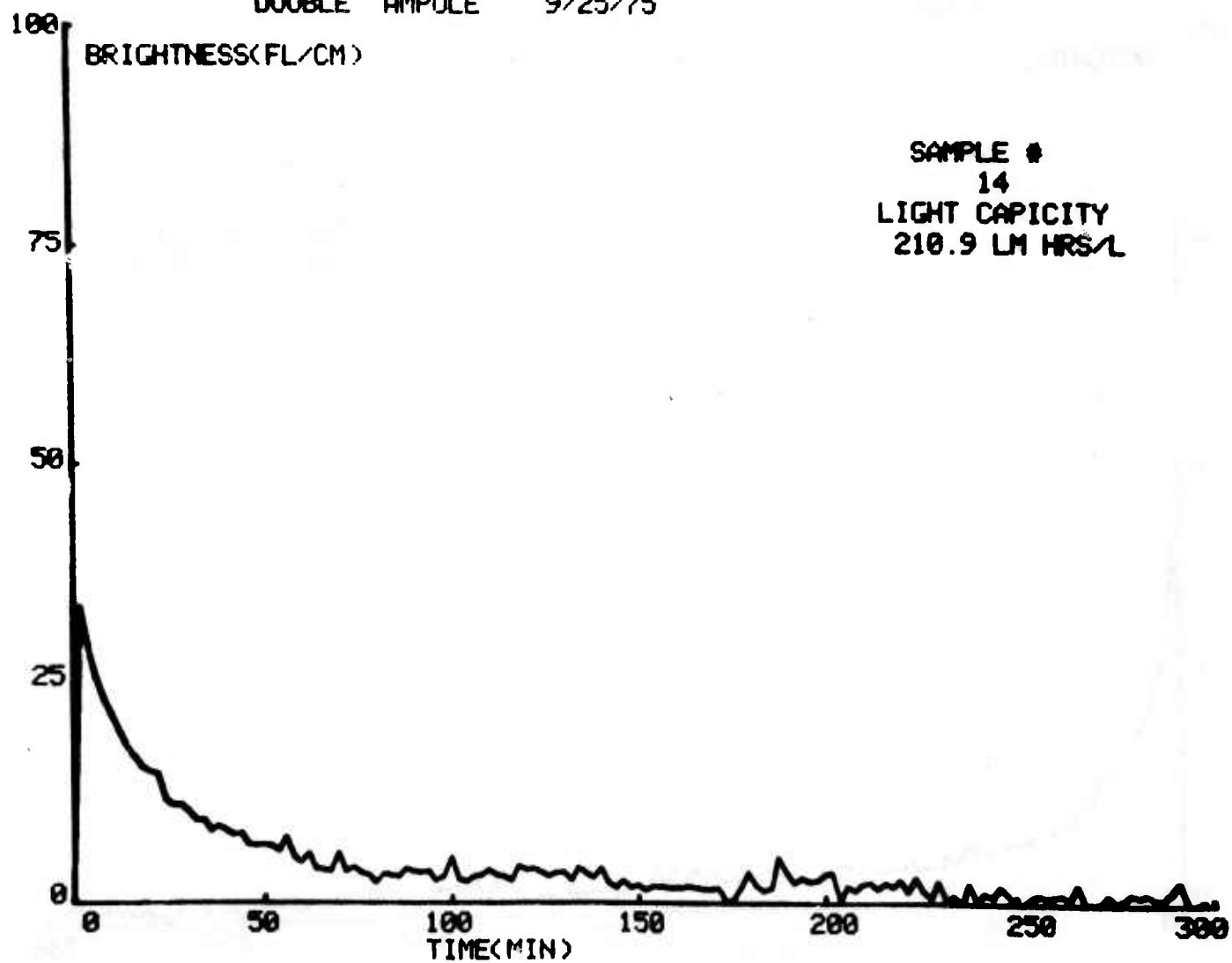




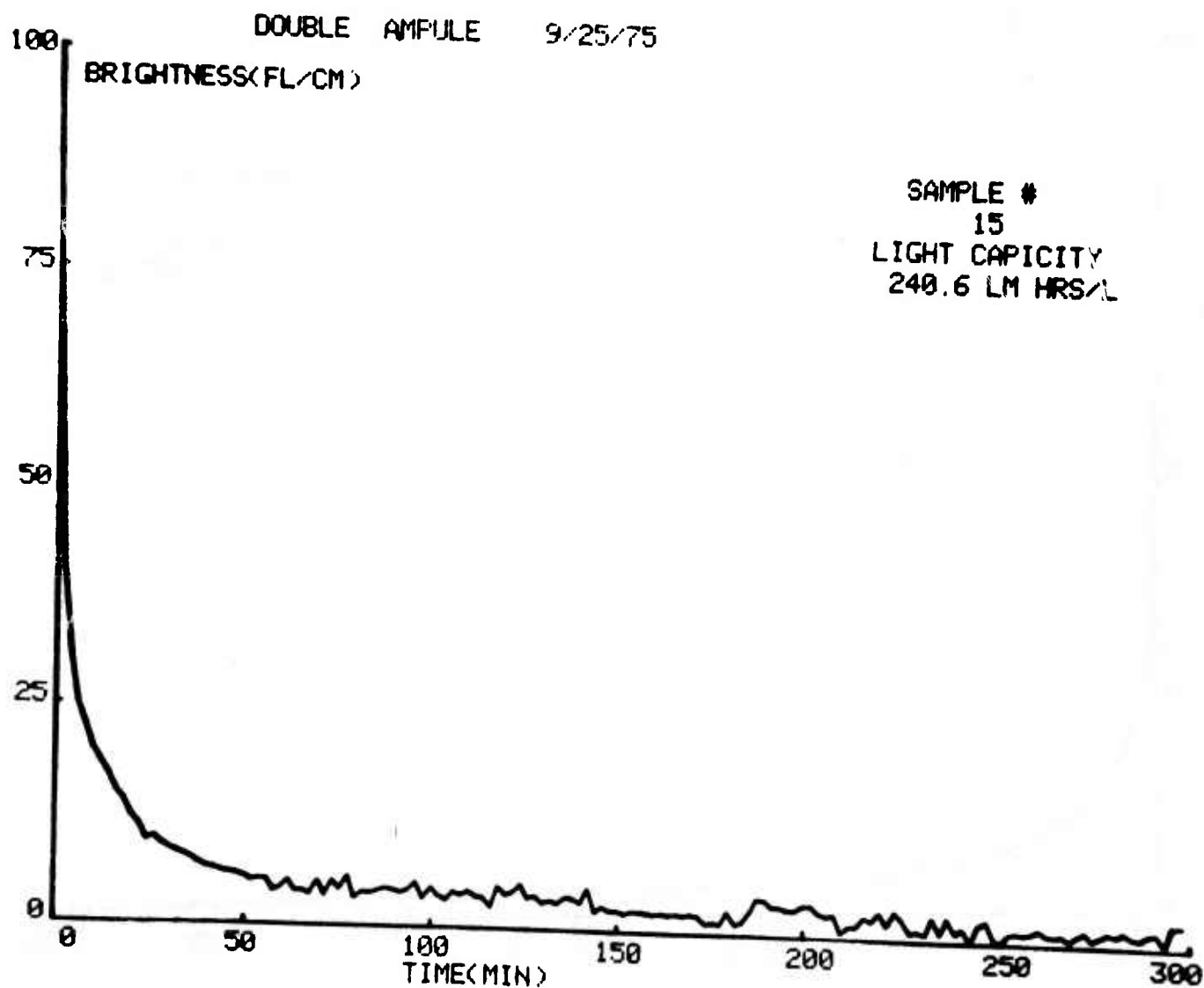


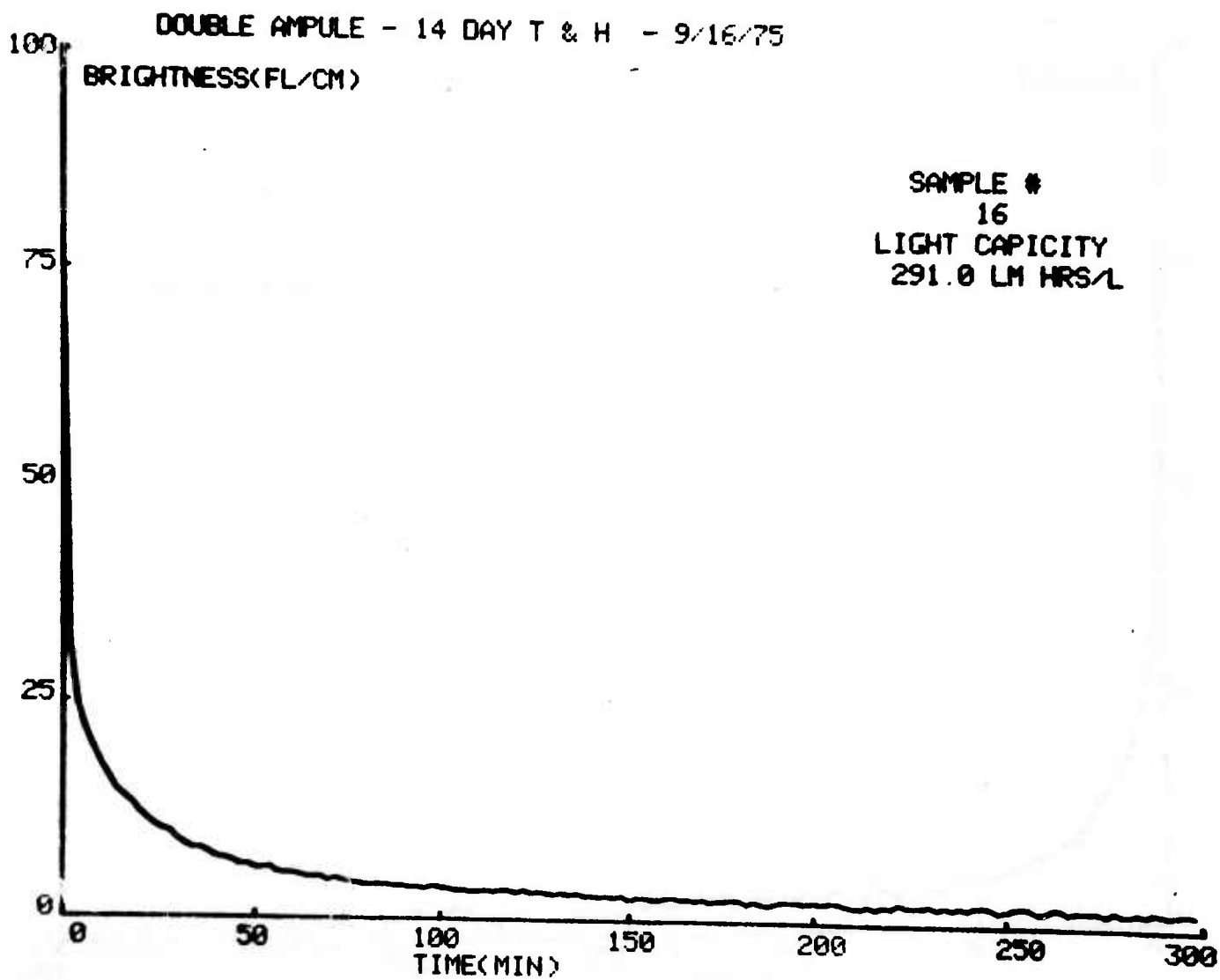


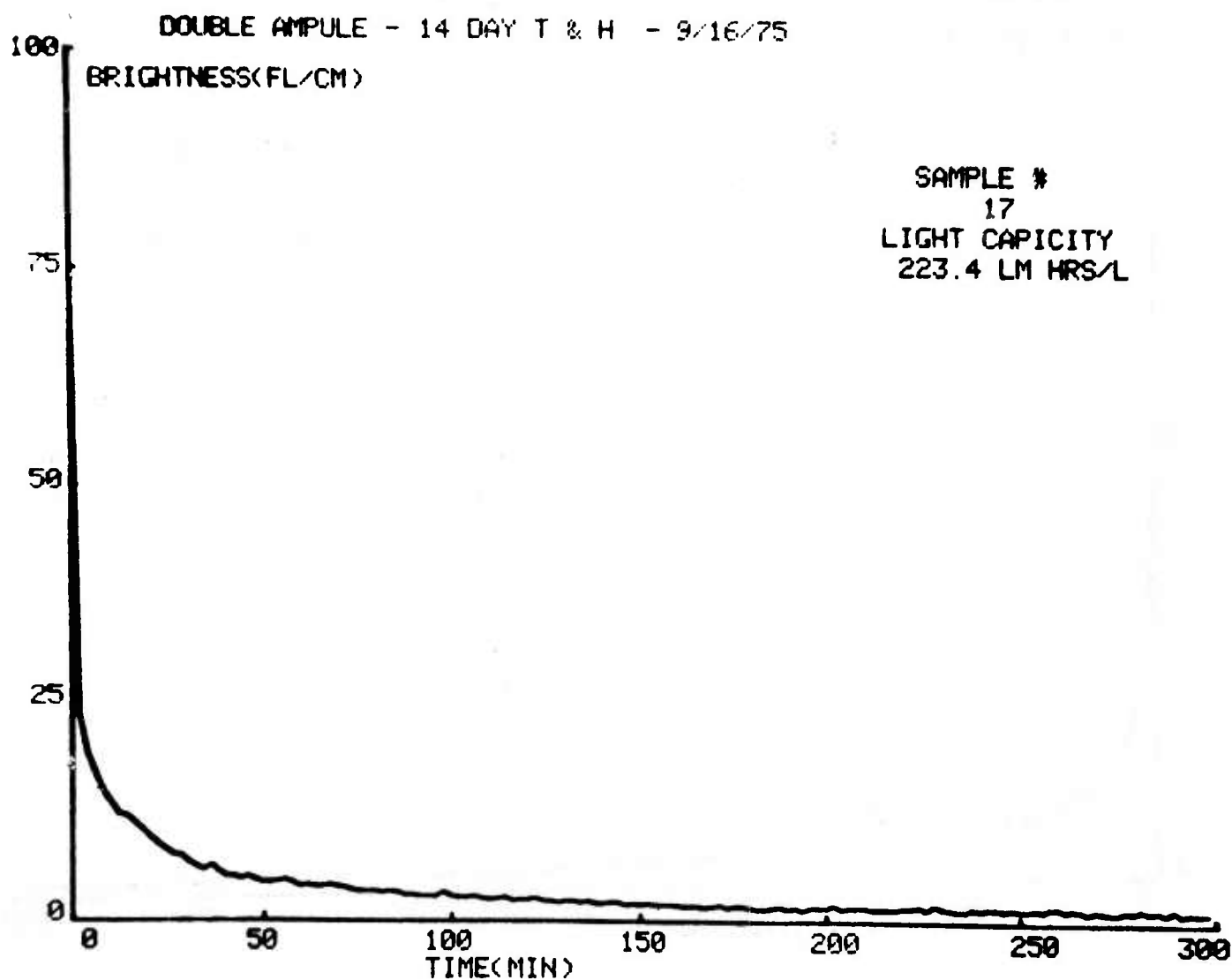
DOUBLE AMPULE 9/25/75

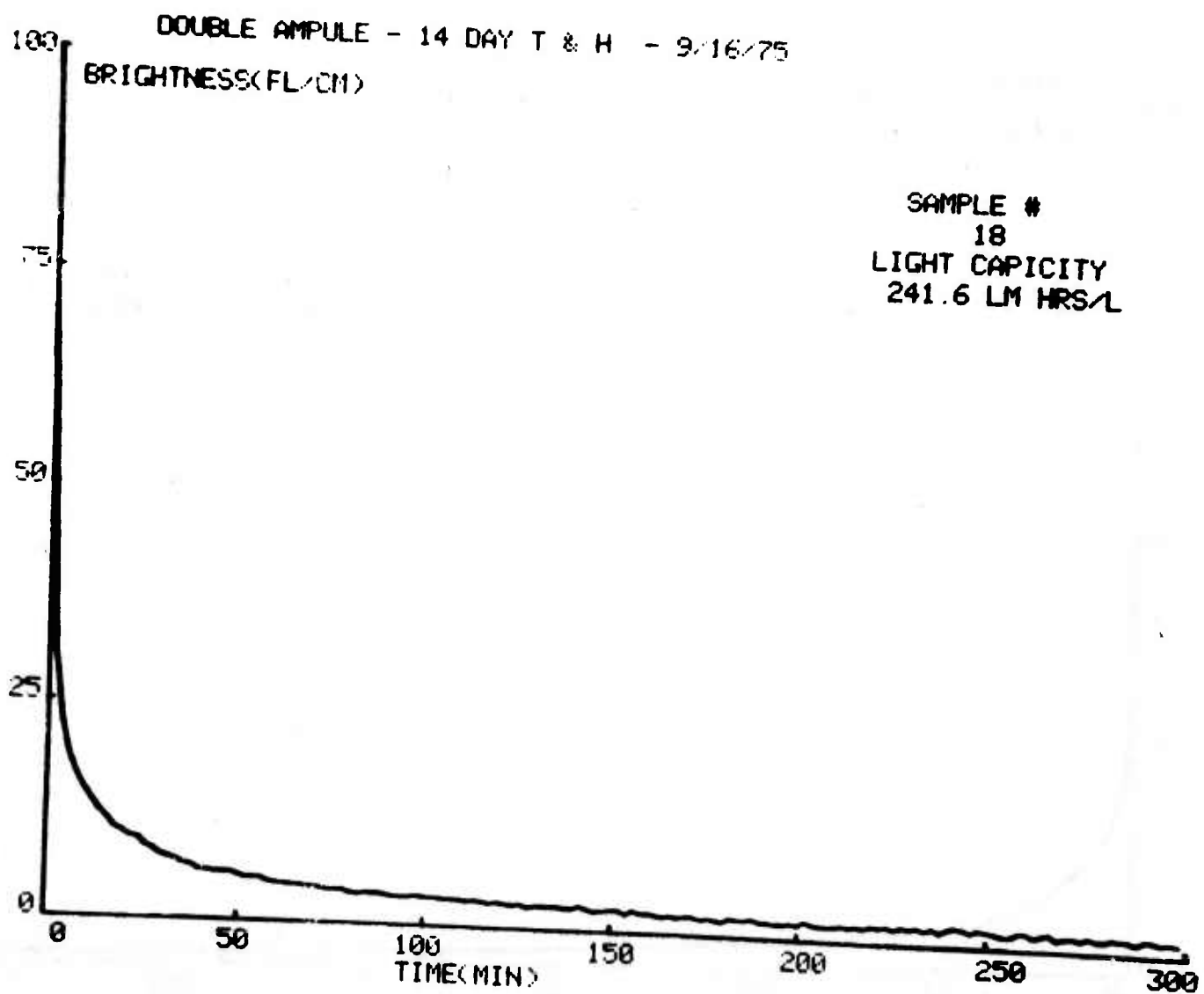


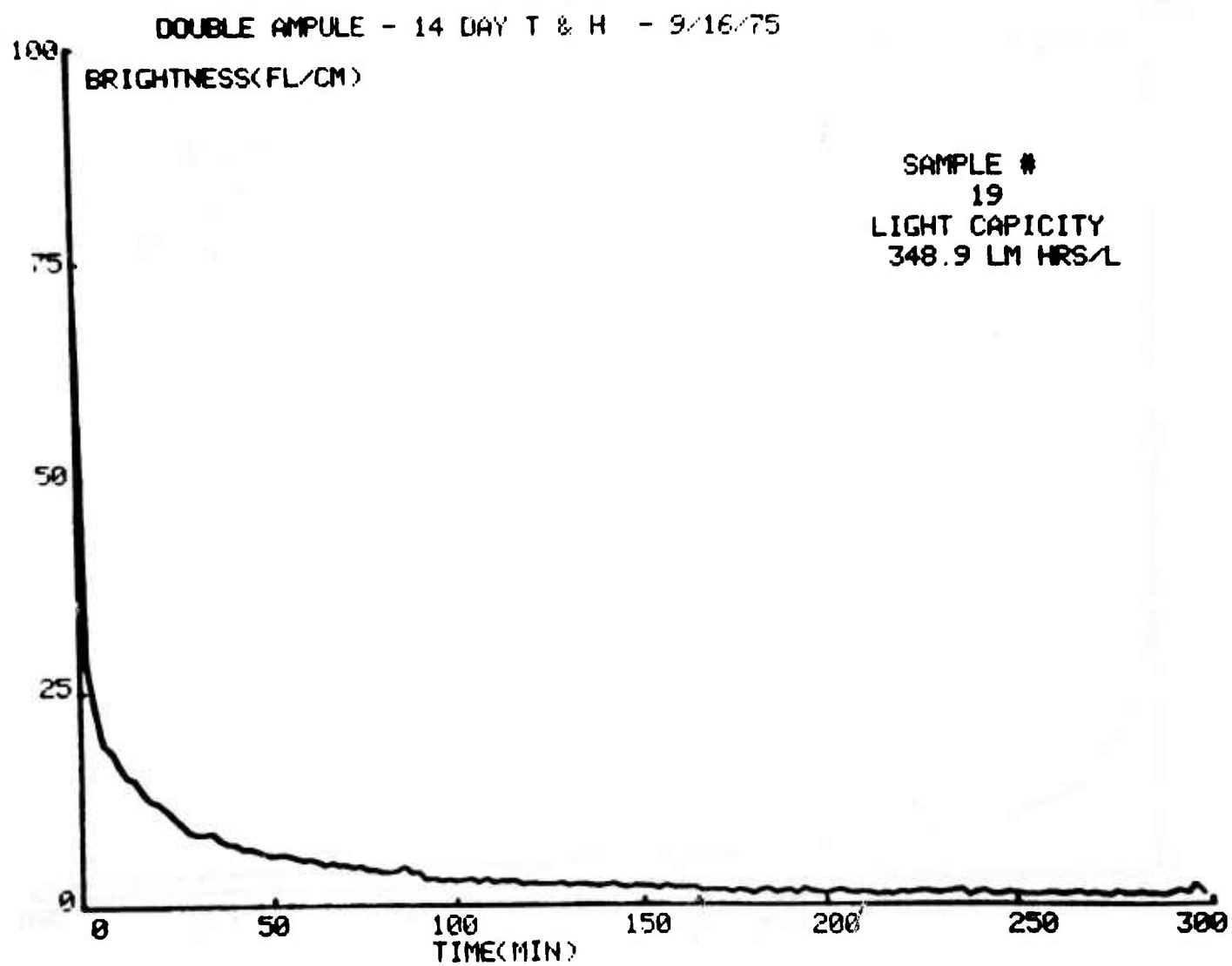


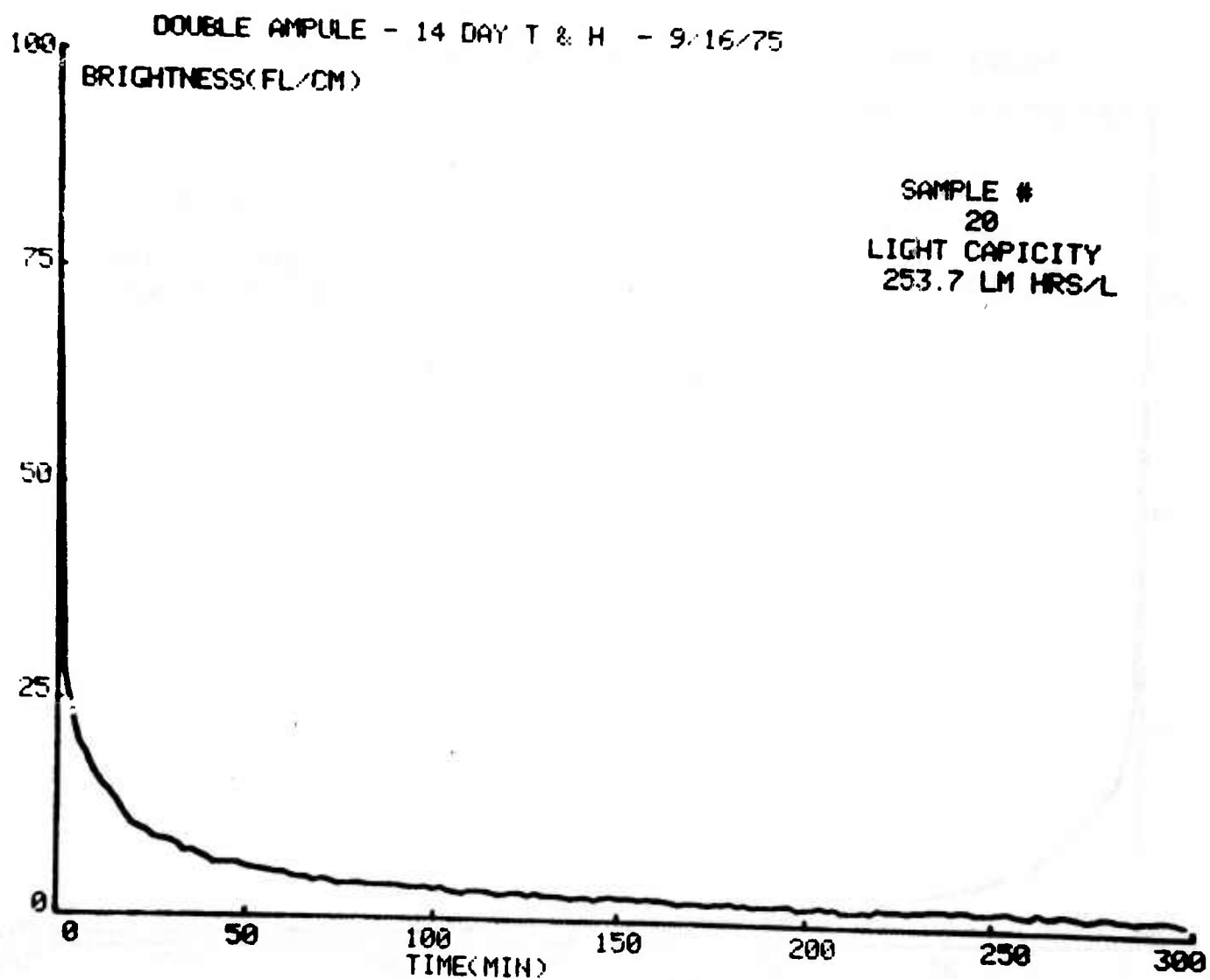


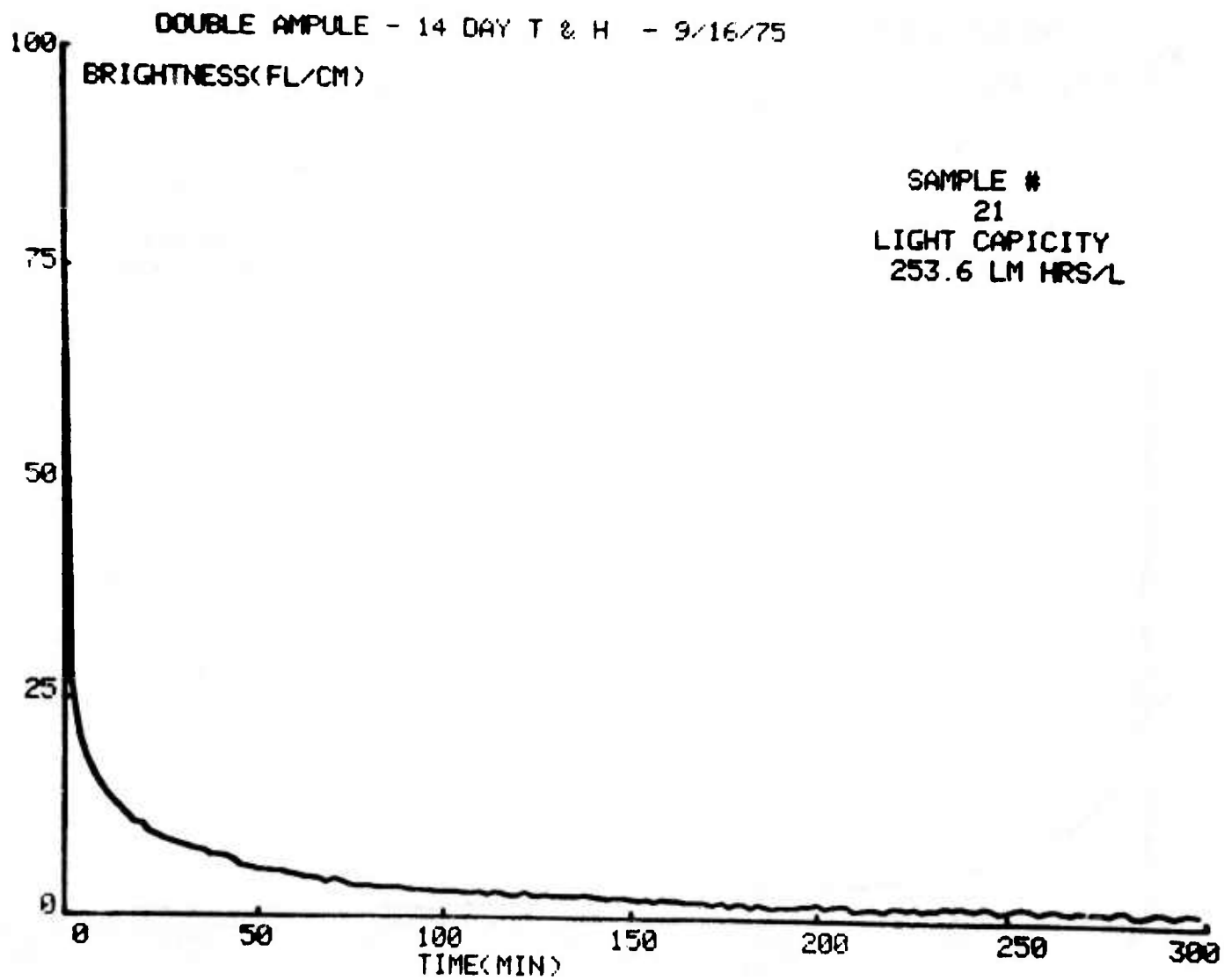


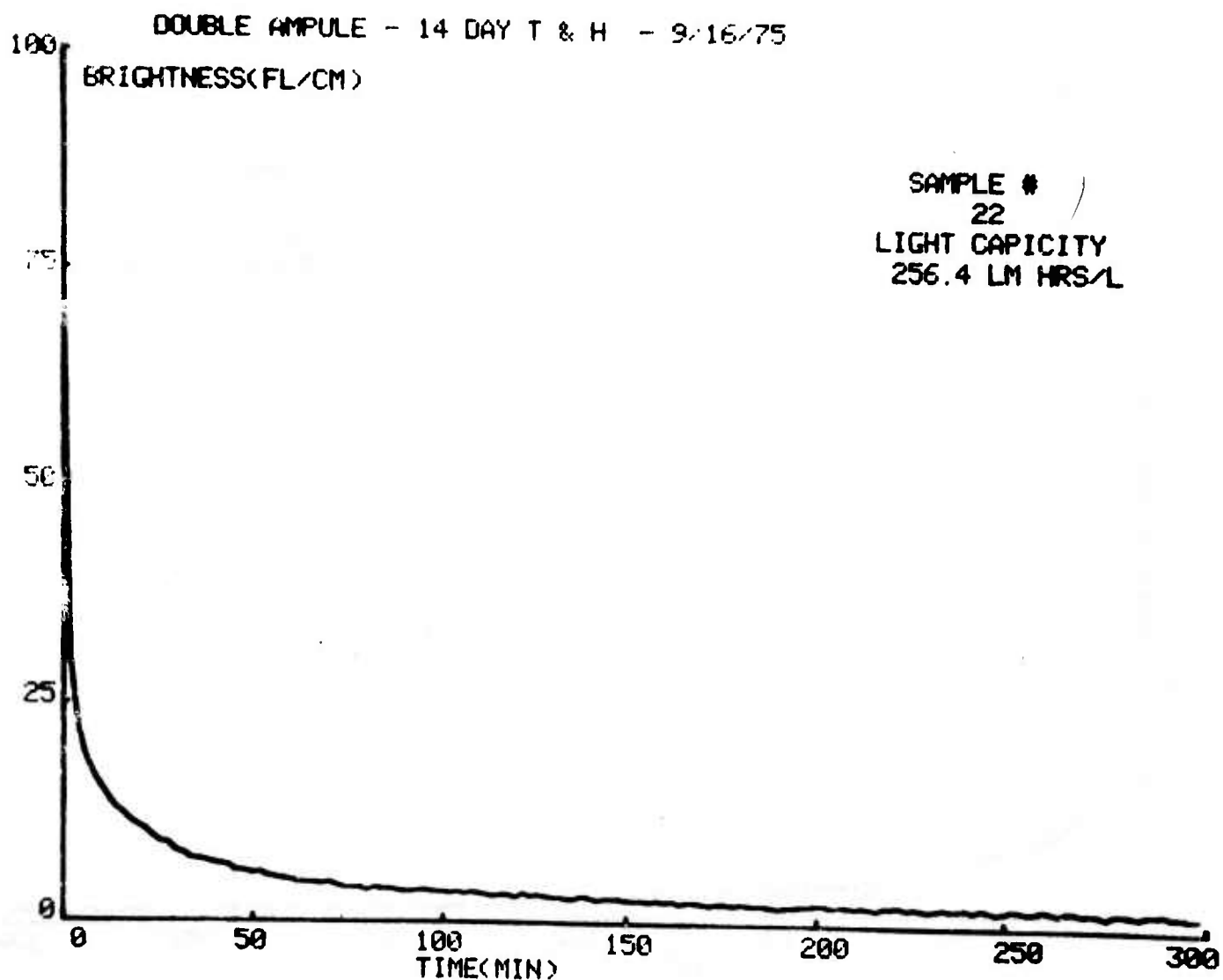




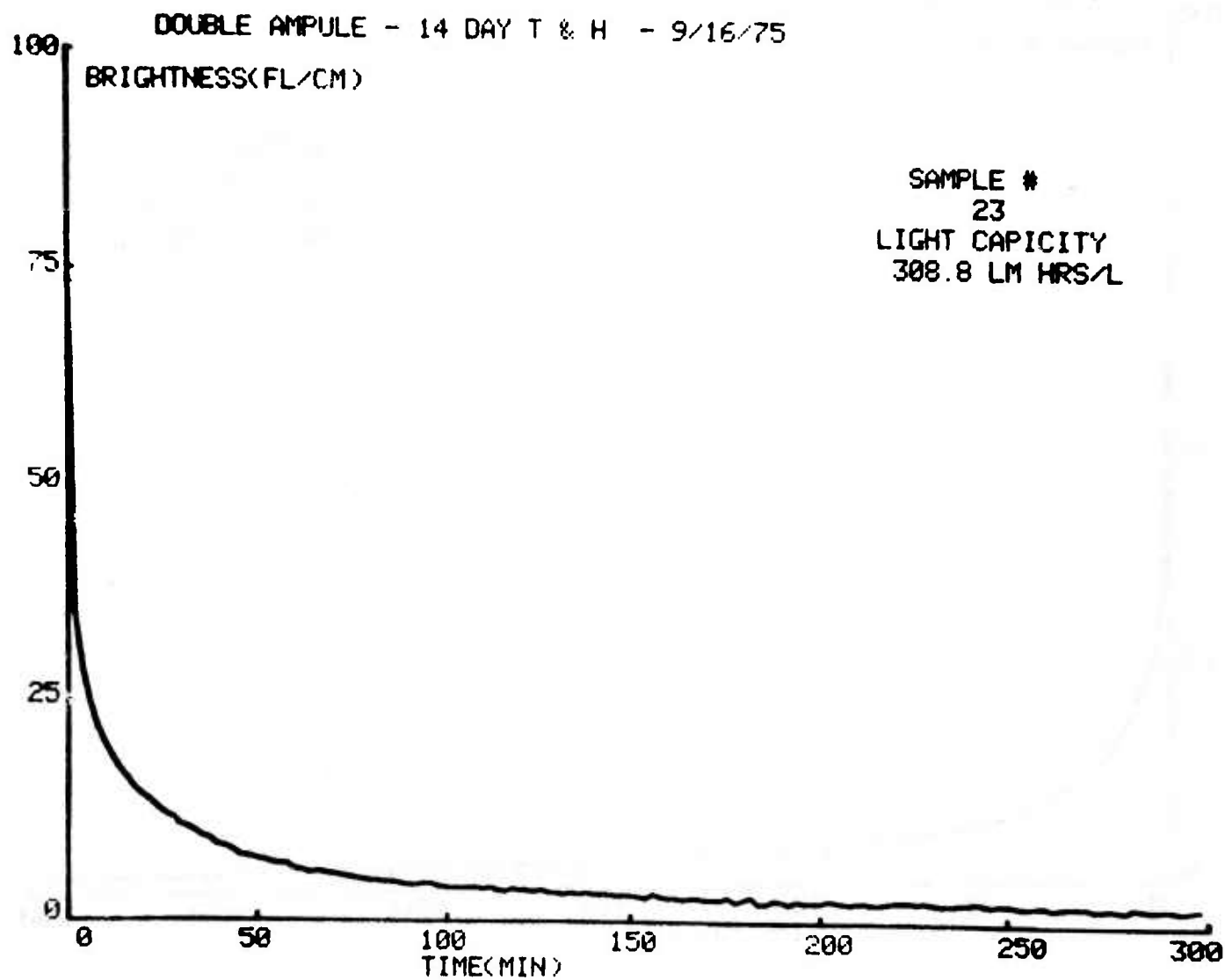


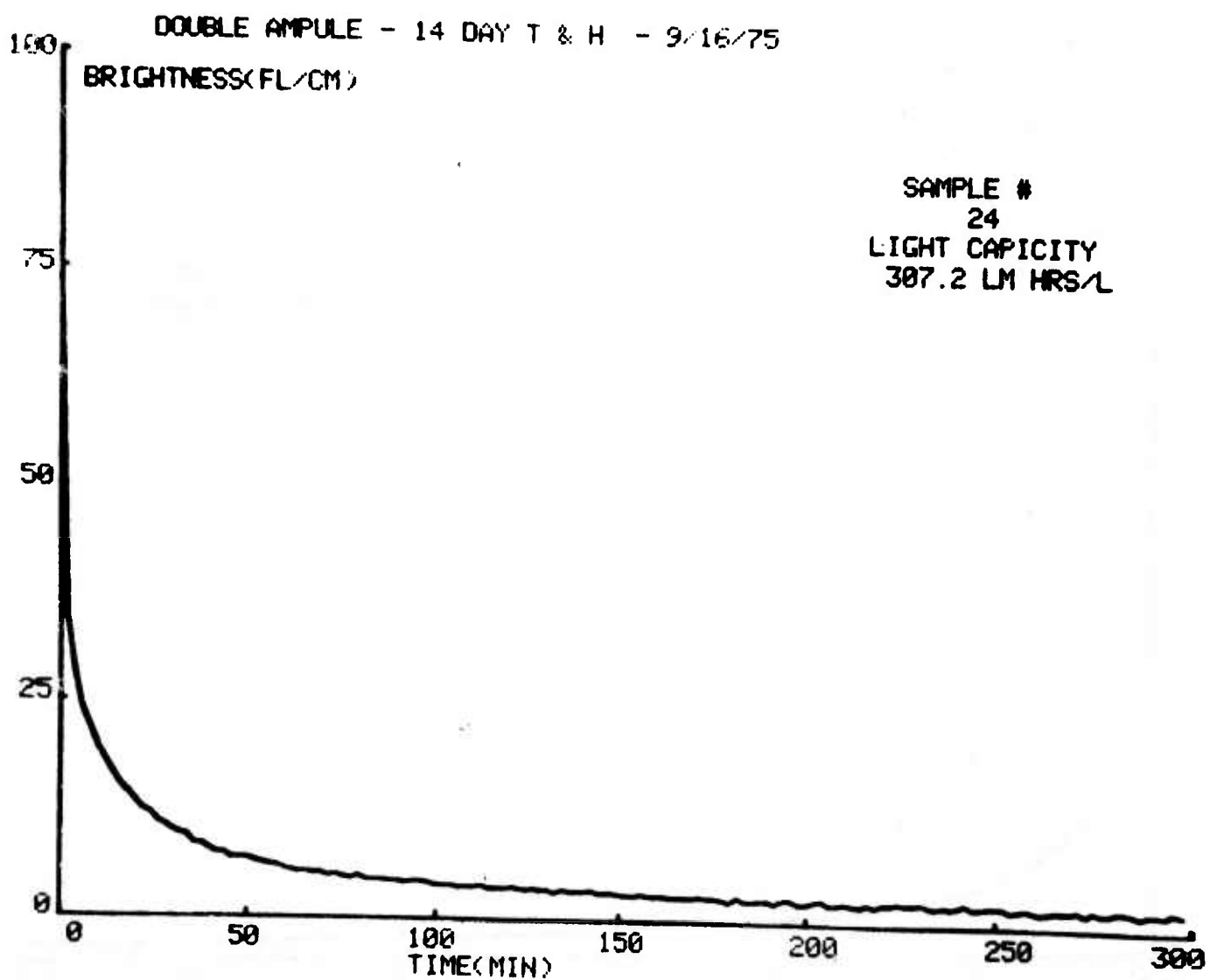


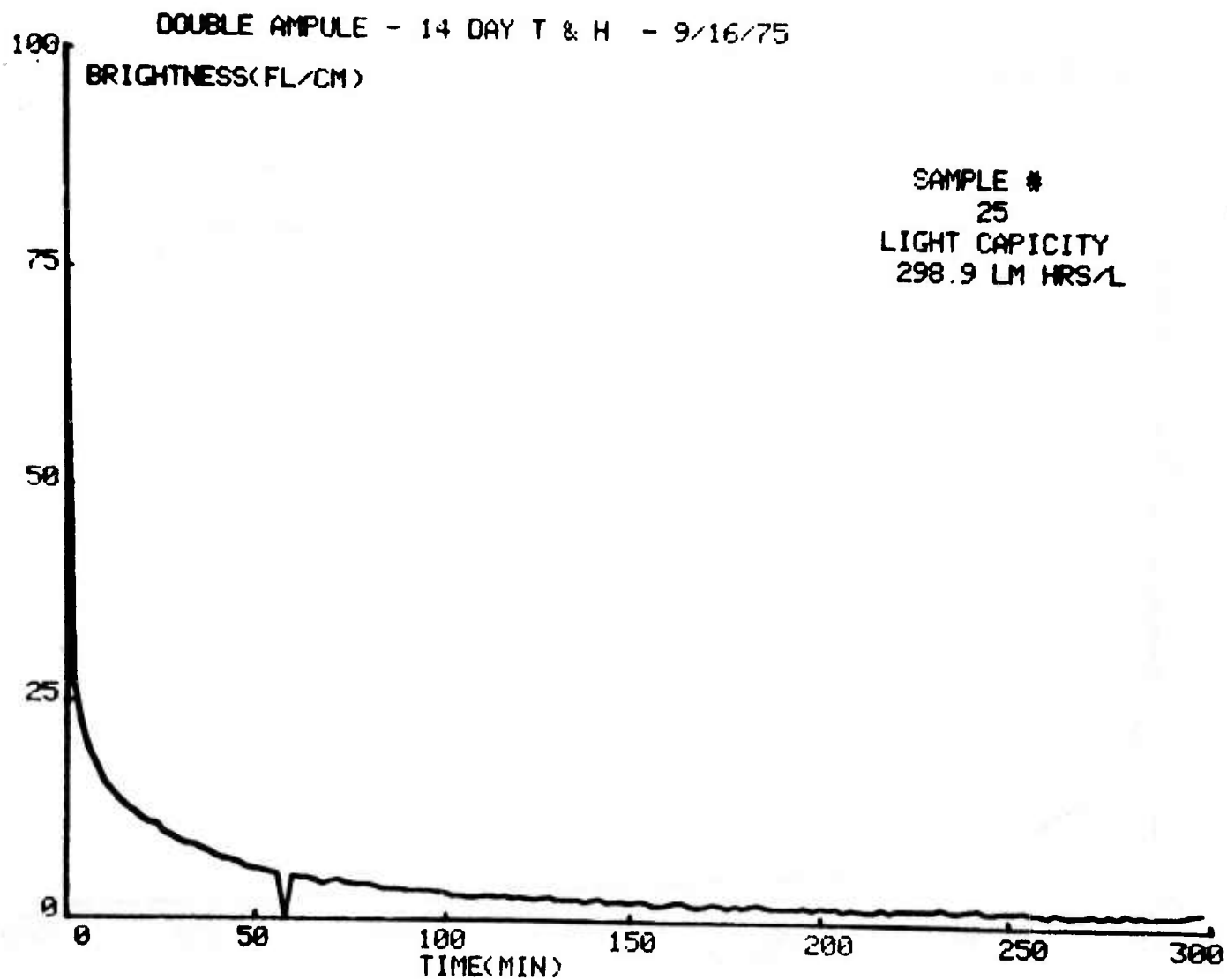


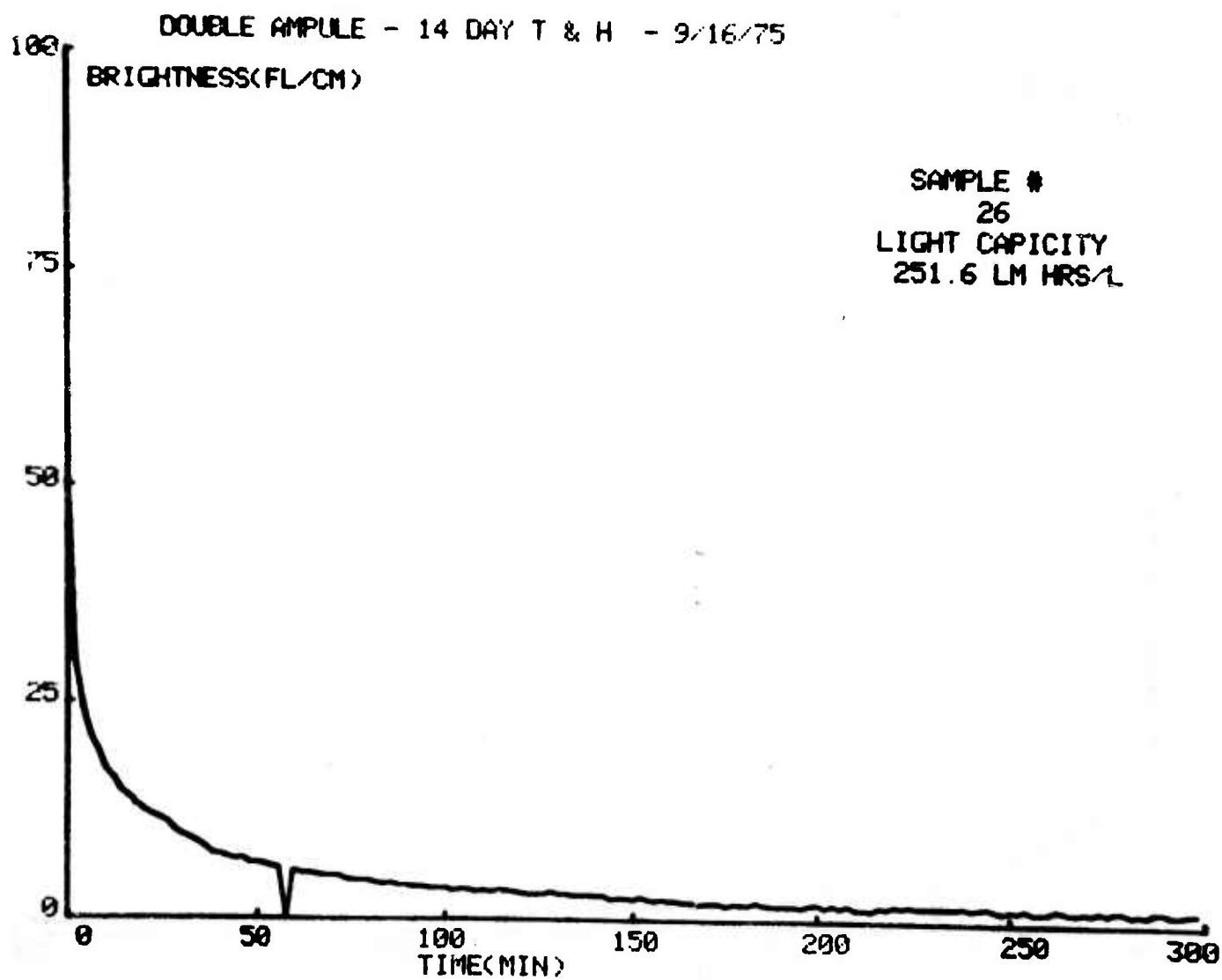


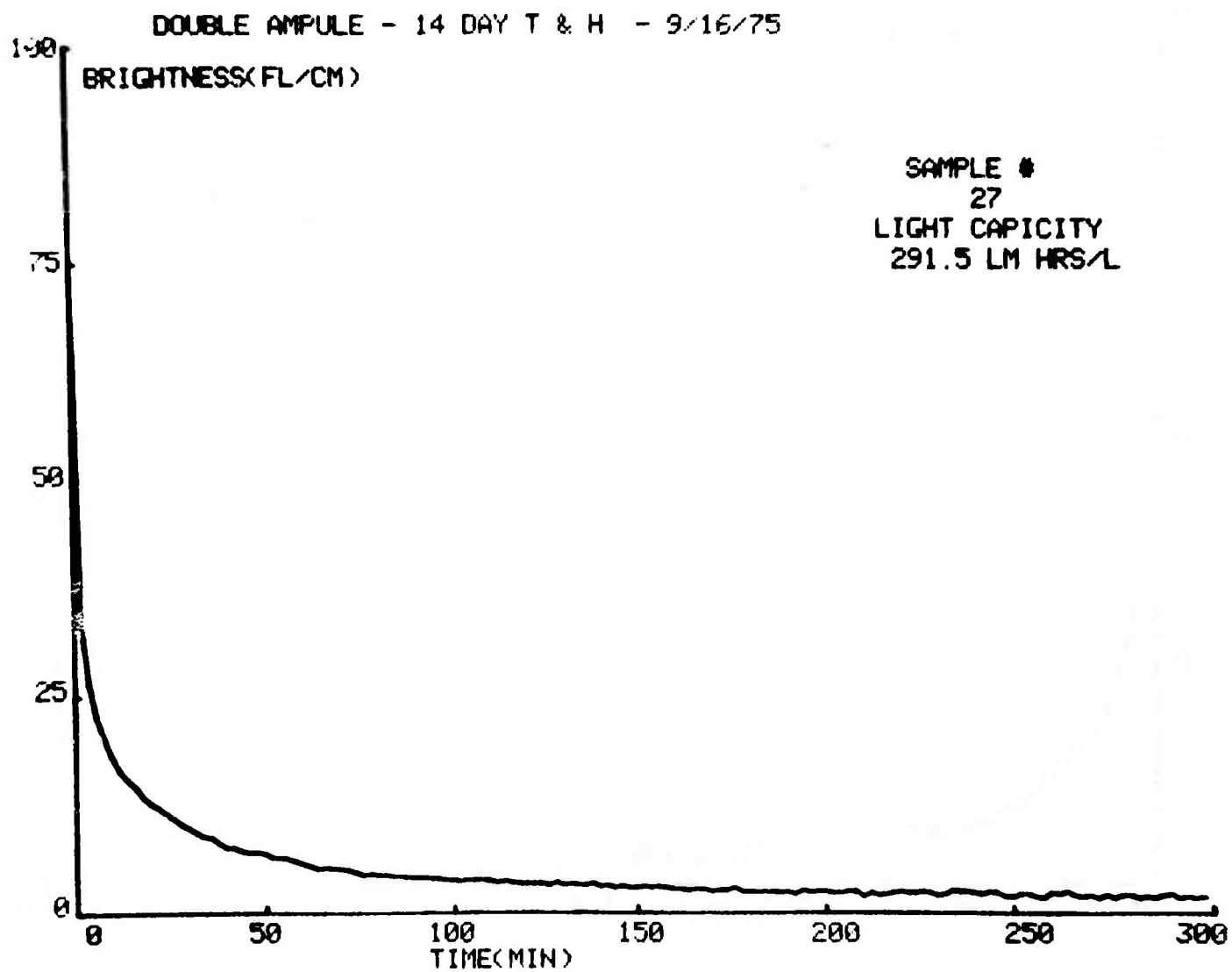




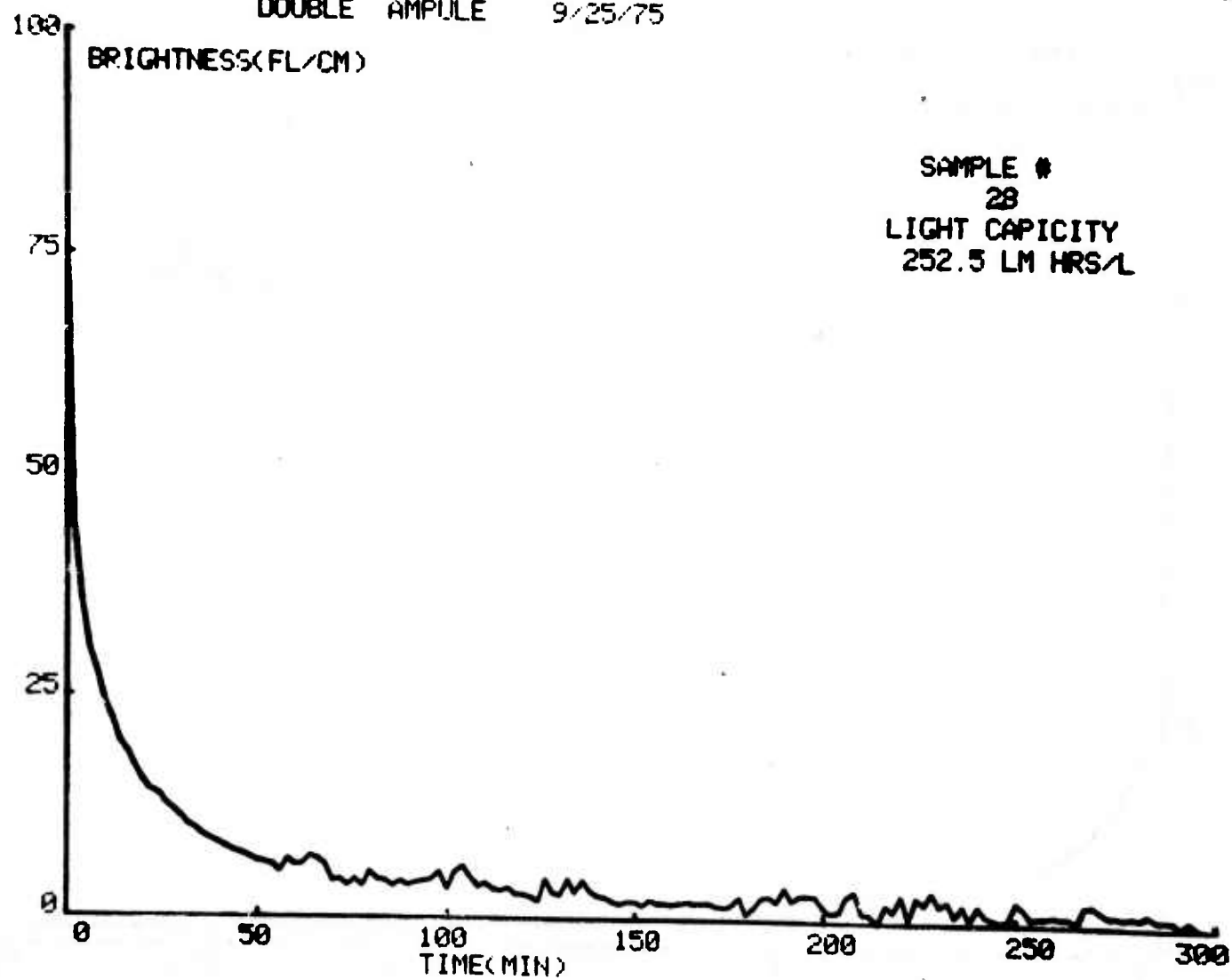




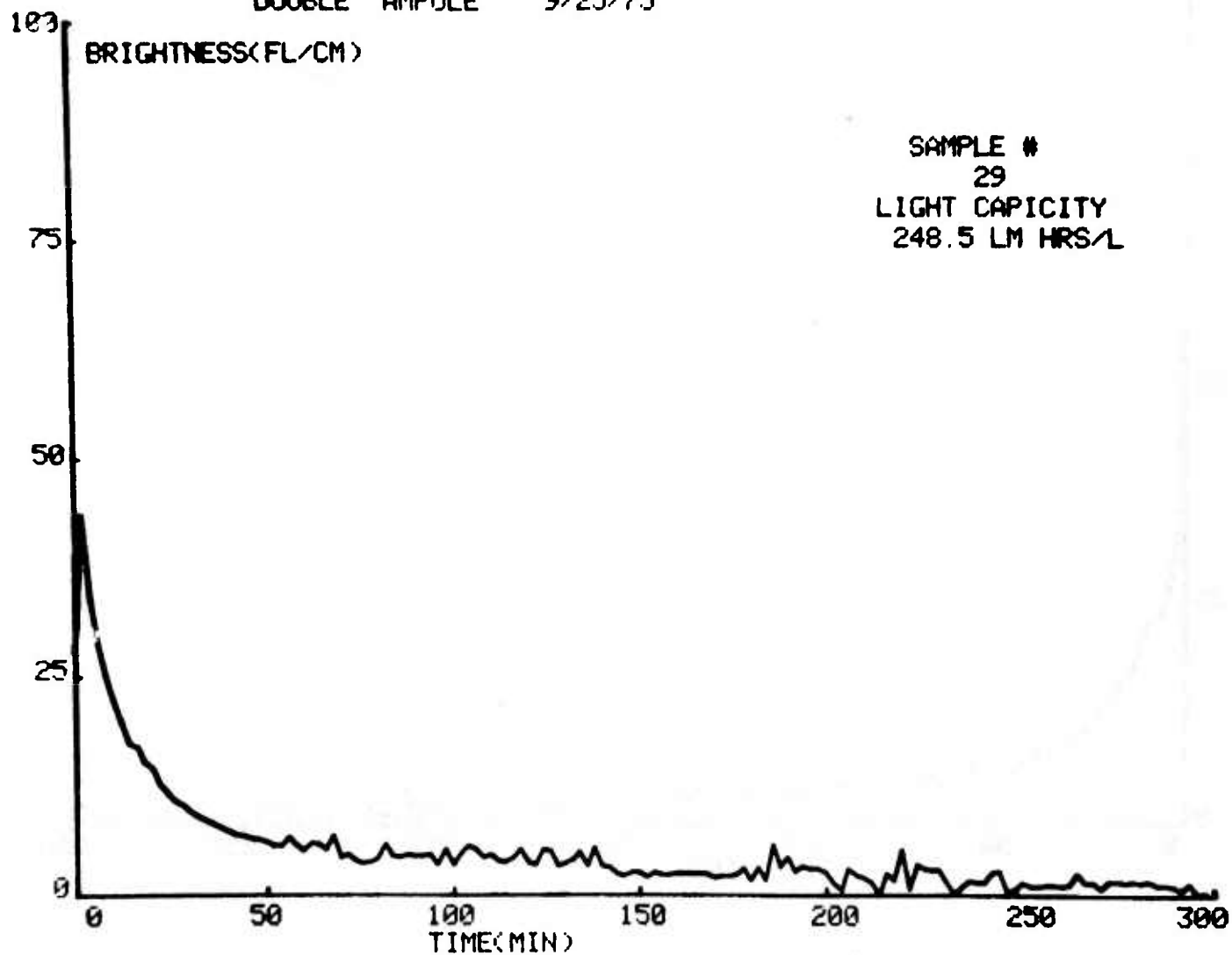




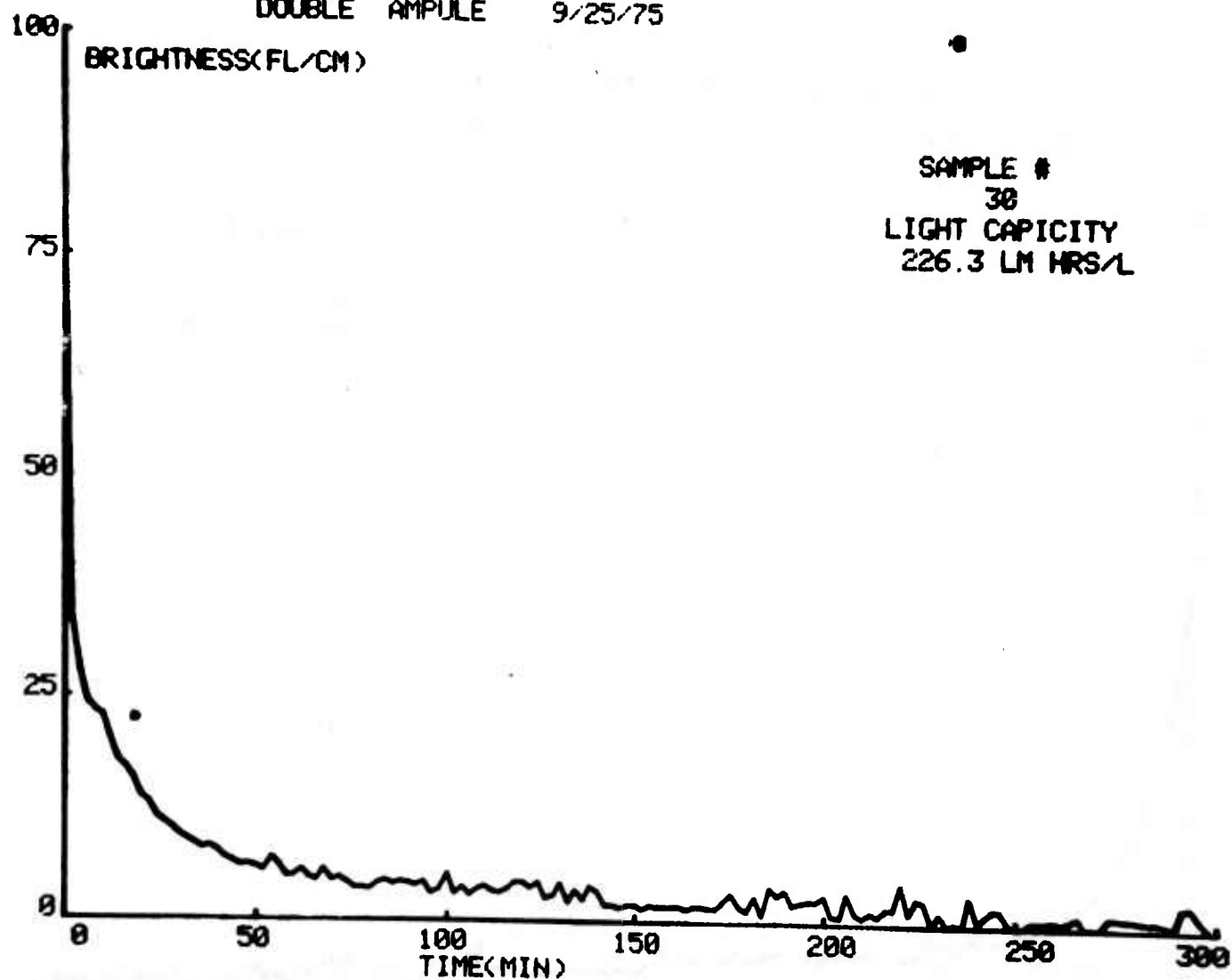
DOUBLE AMPULE 9/25/75



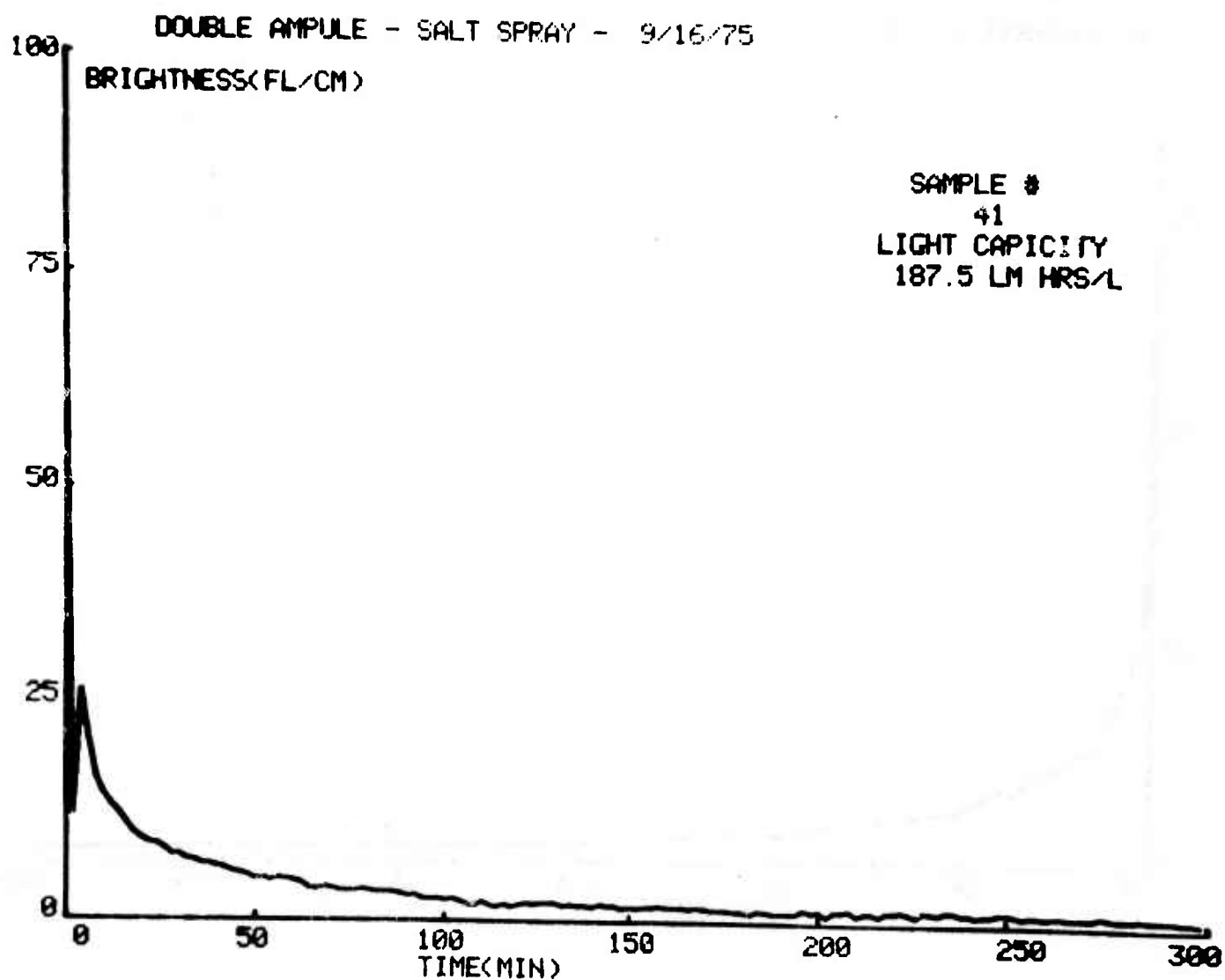
DOUBLE AMPULE 9/25/75



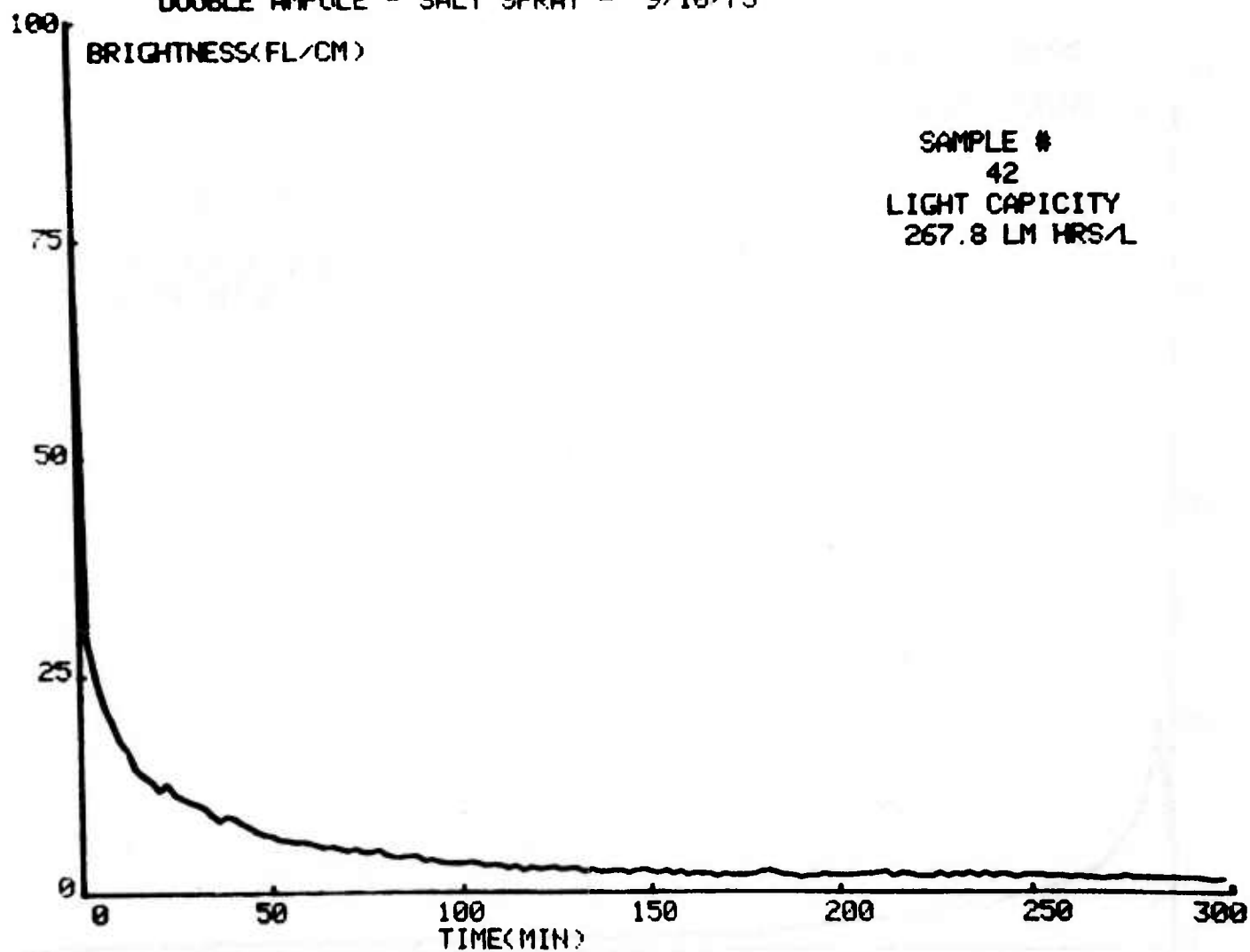
DOUBLE AMPULE 9/25/75

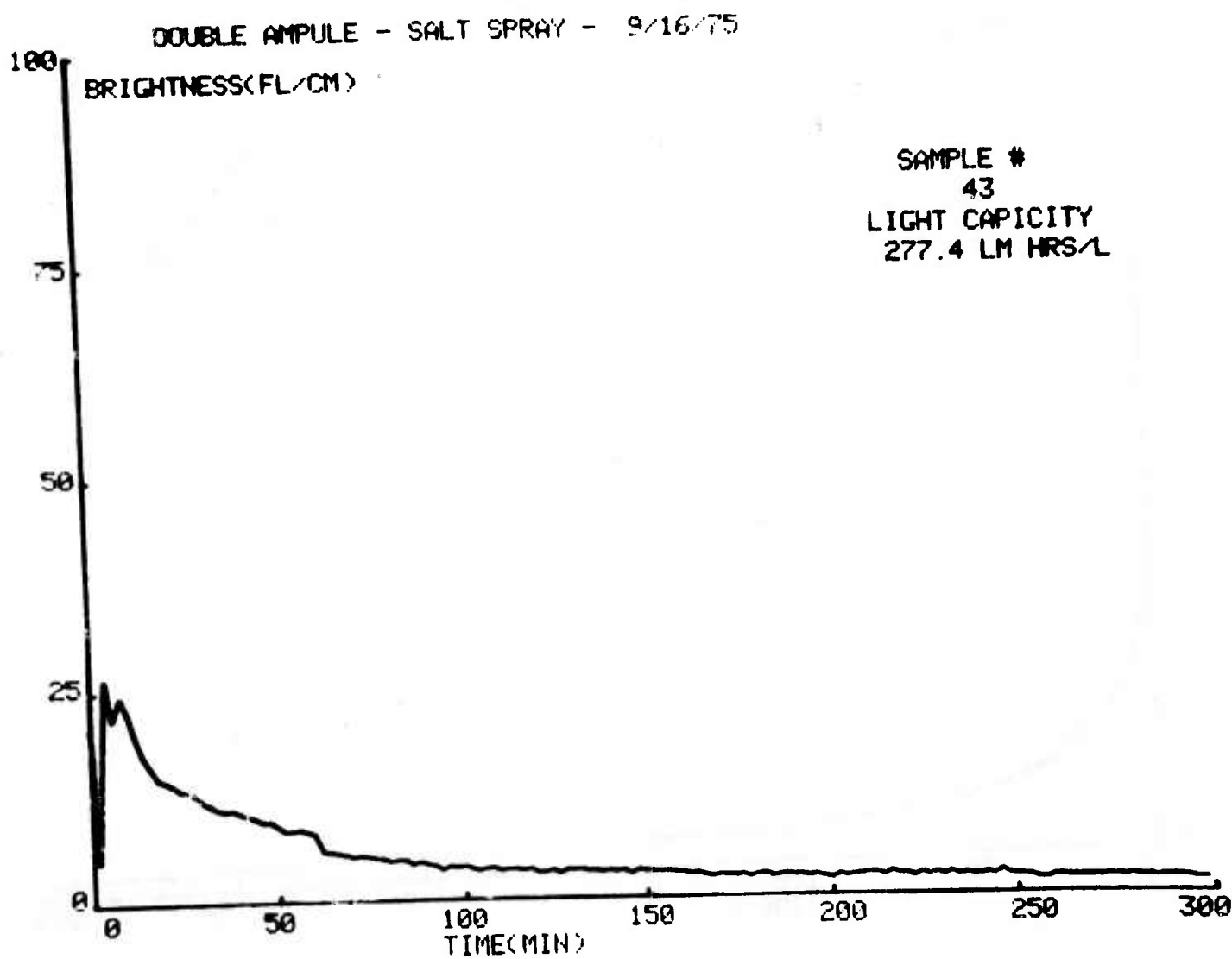


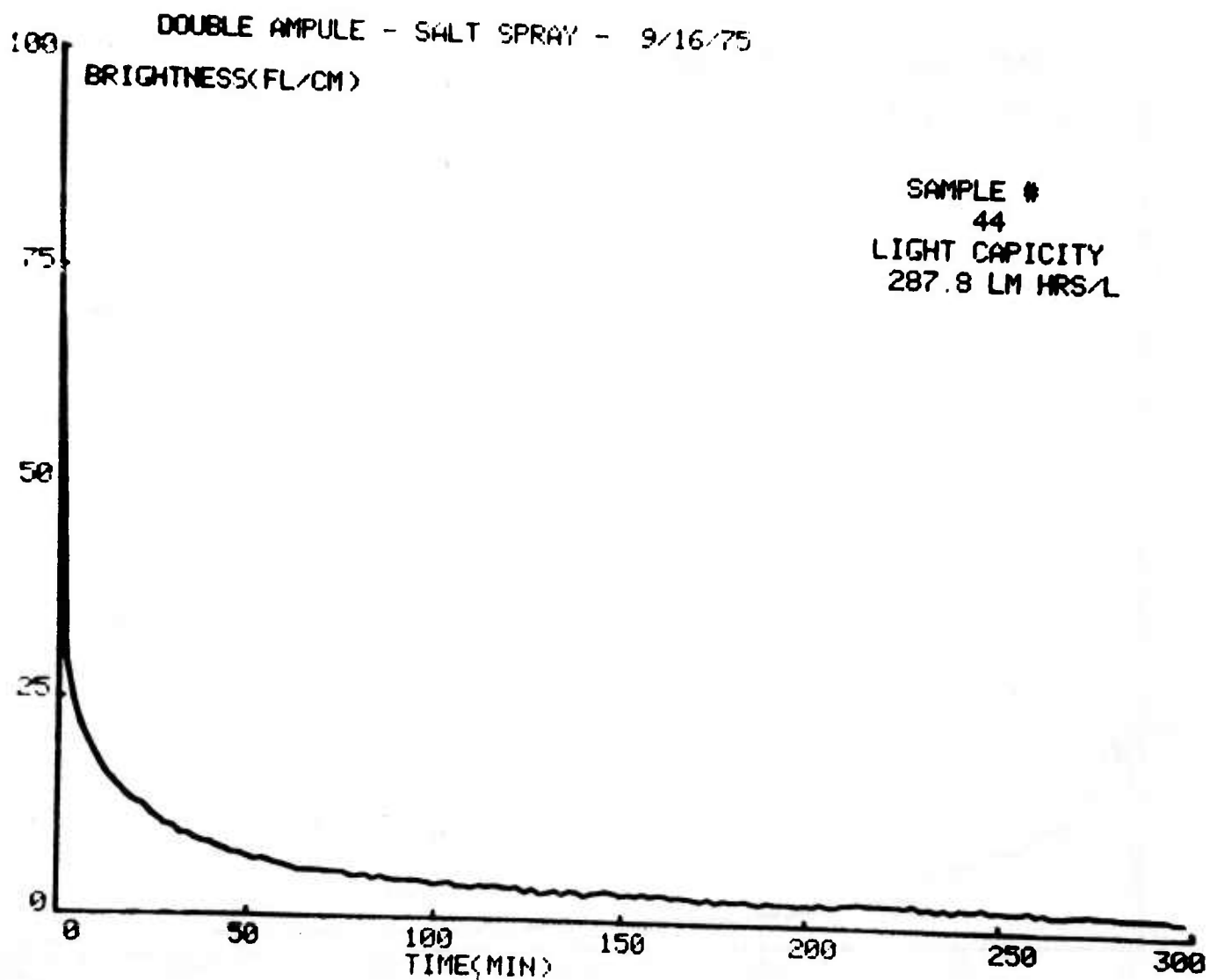


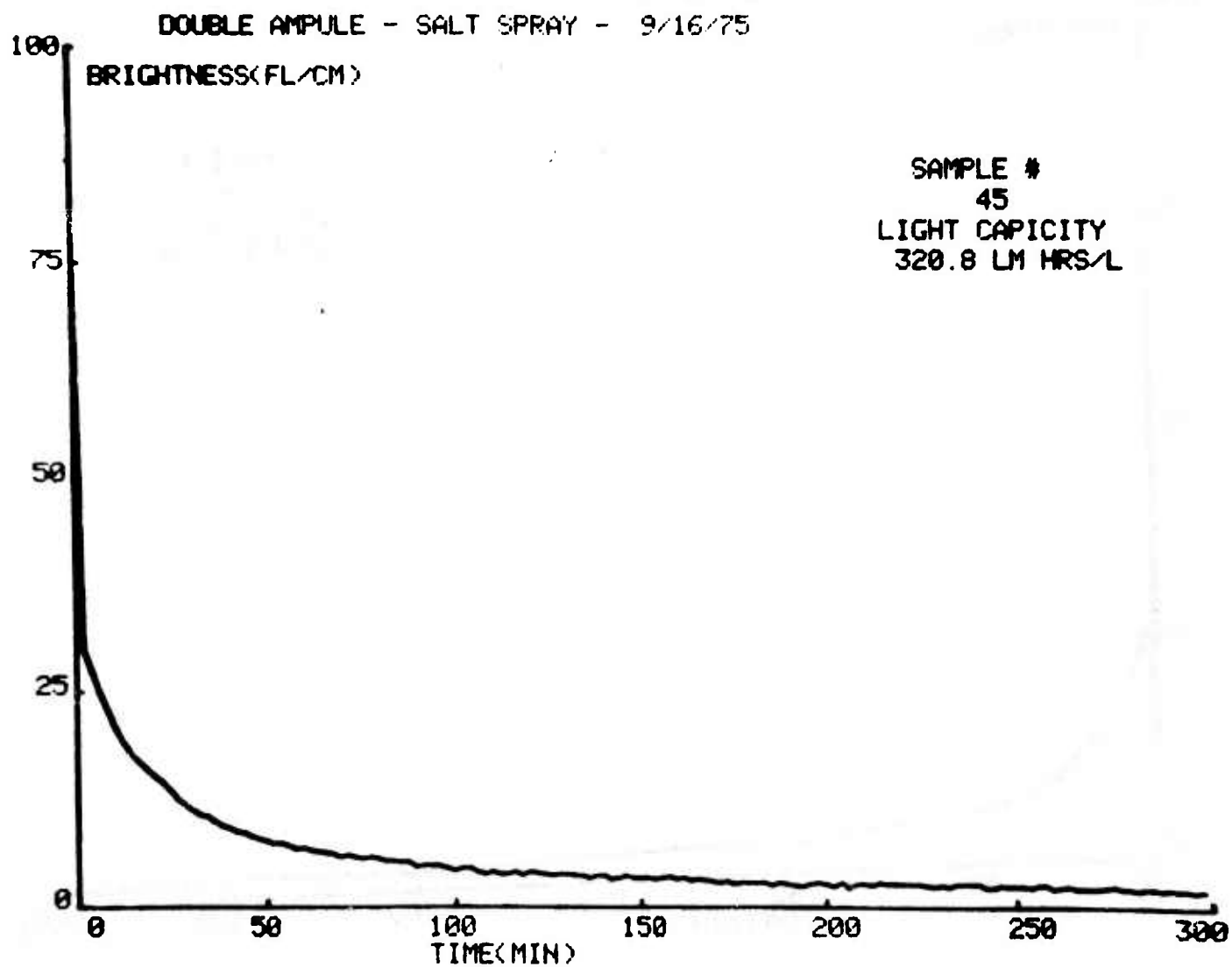


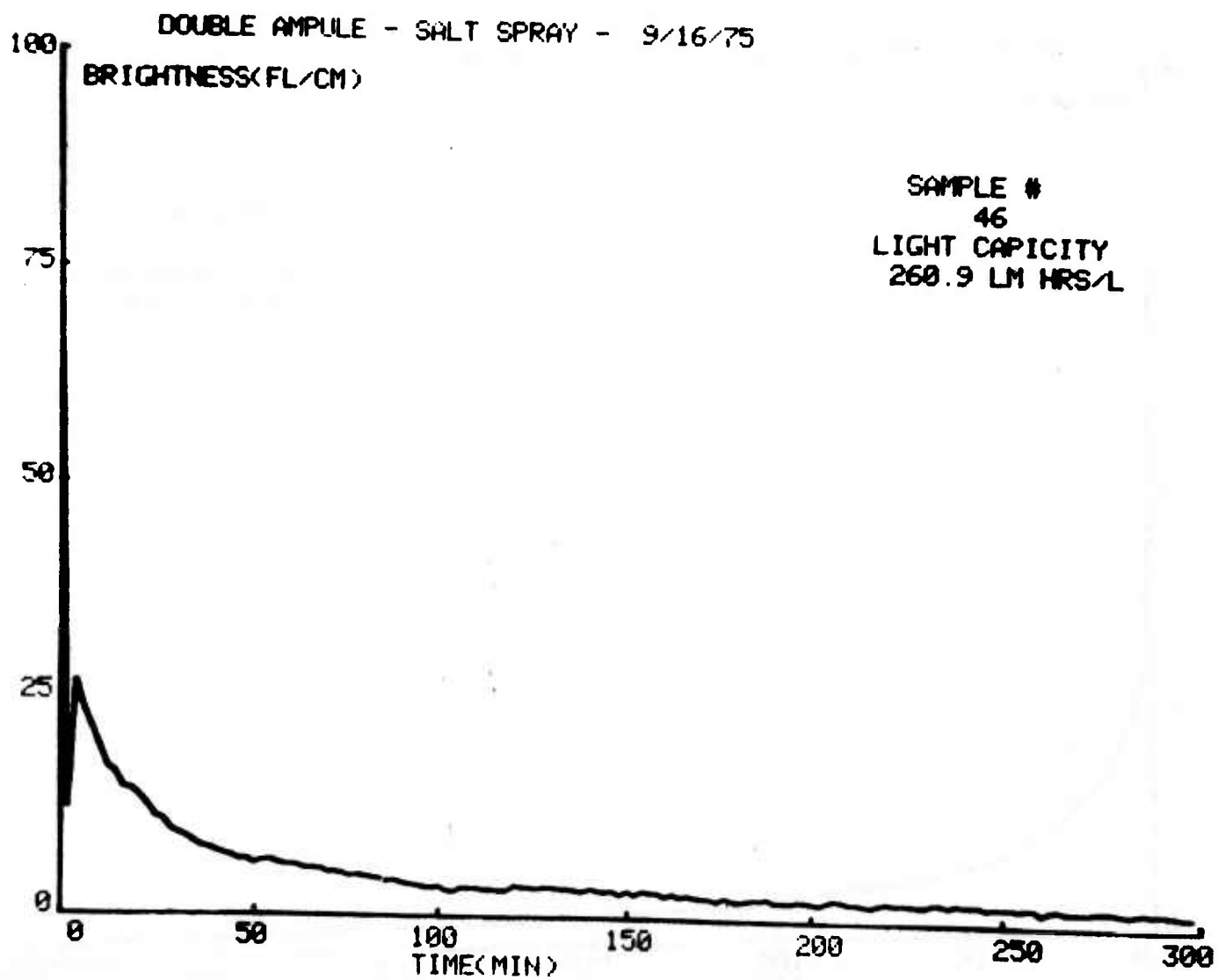
DOUBLE AMPULE - SALT SPRAY - 9/16/75

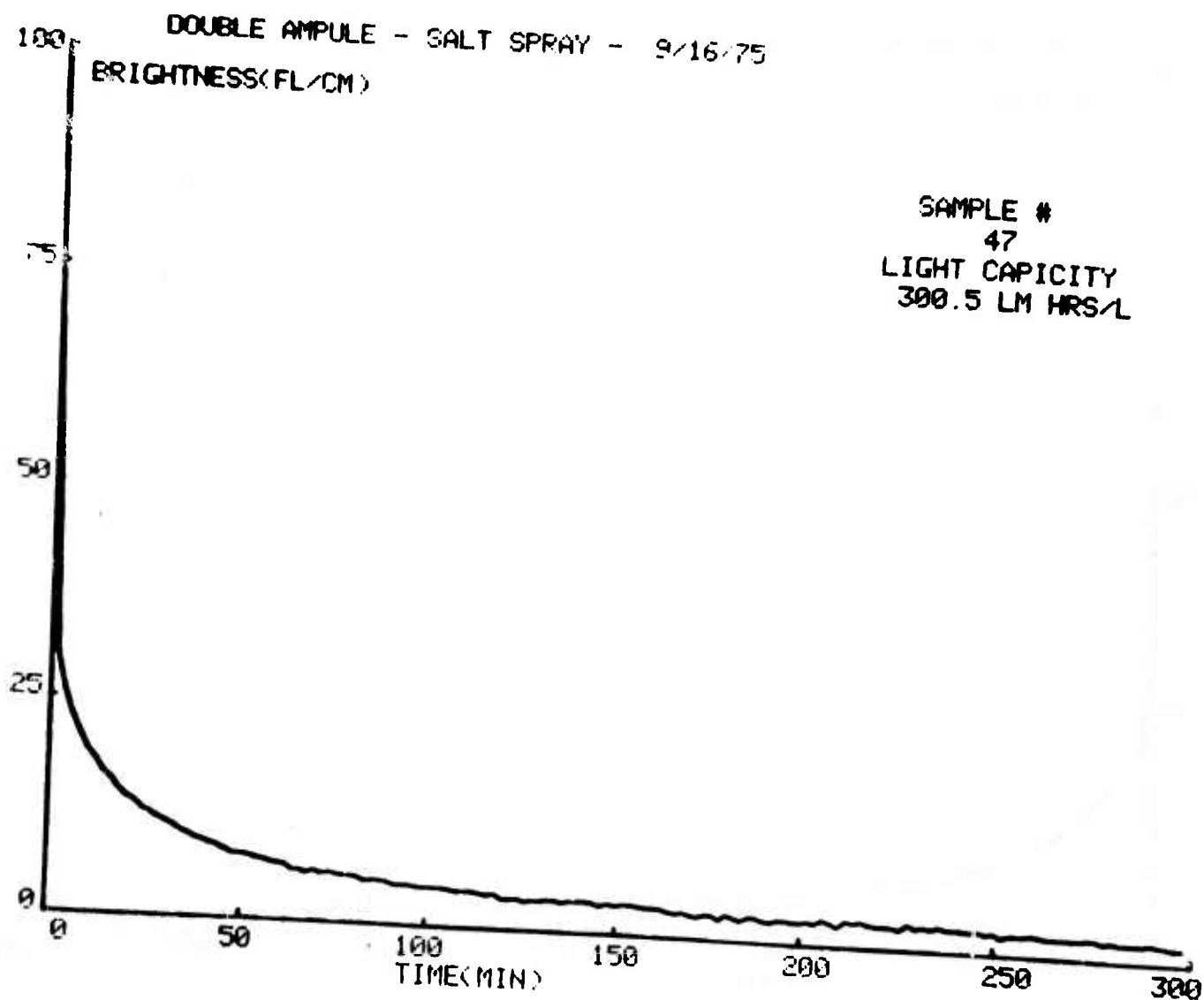


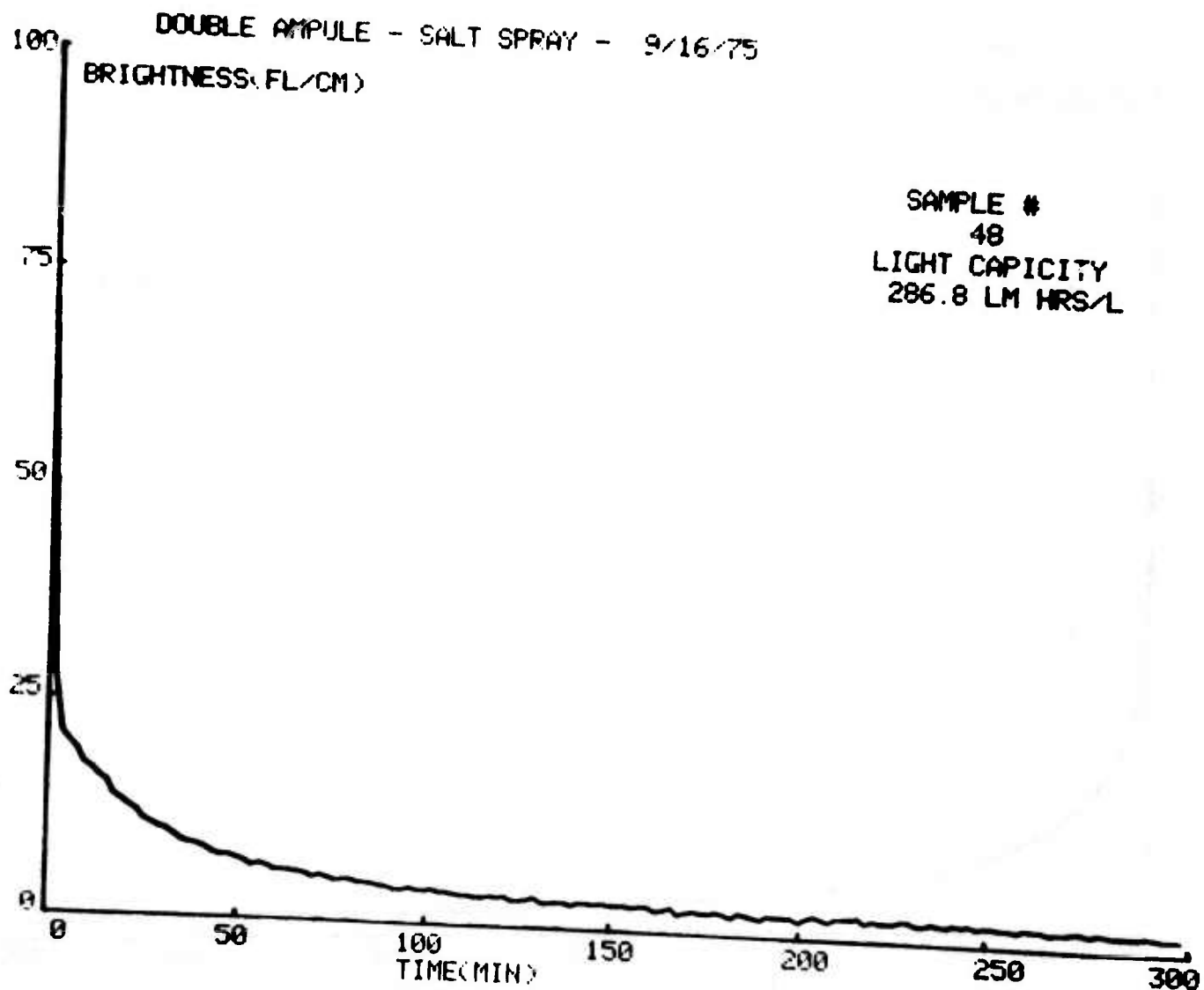




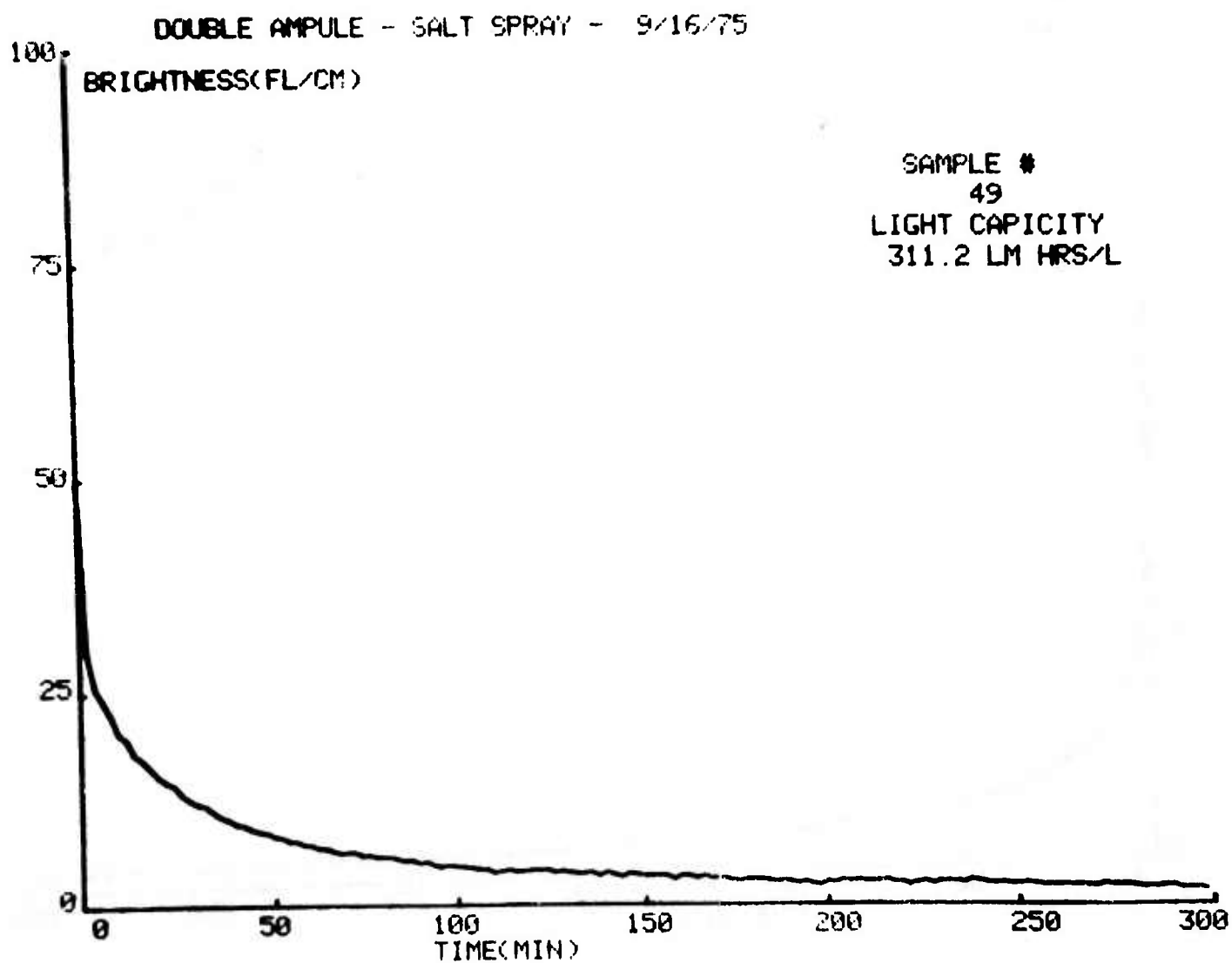


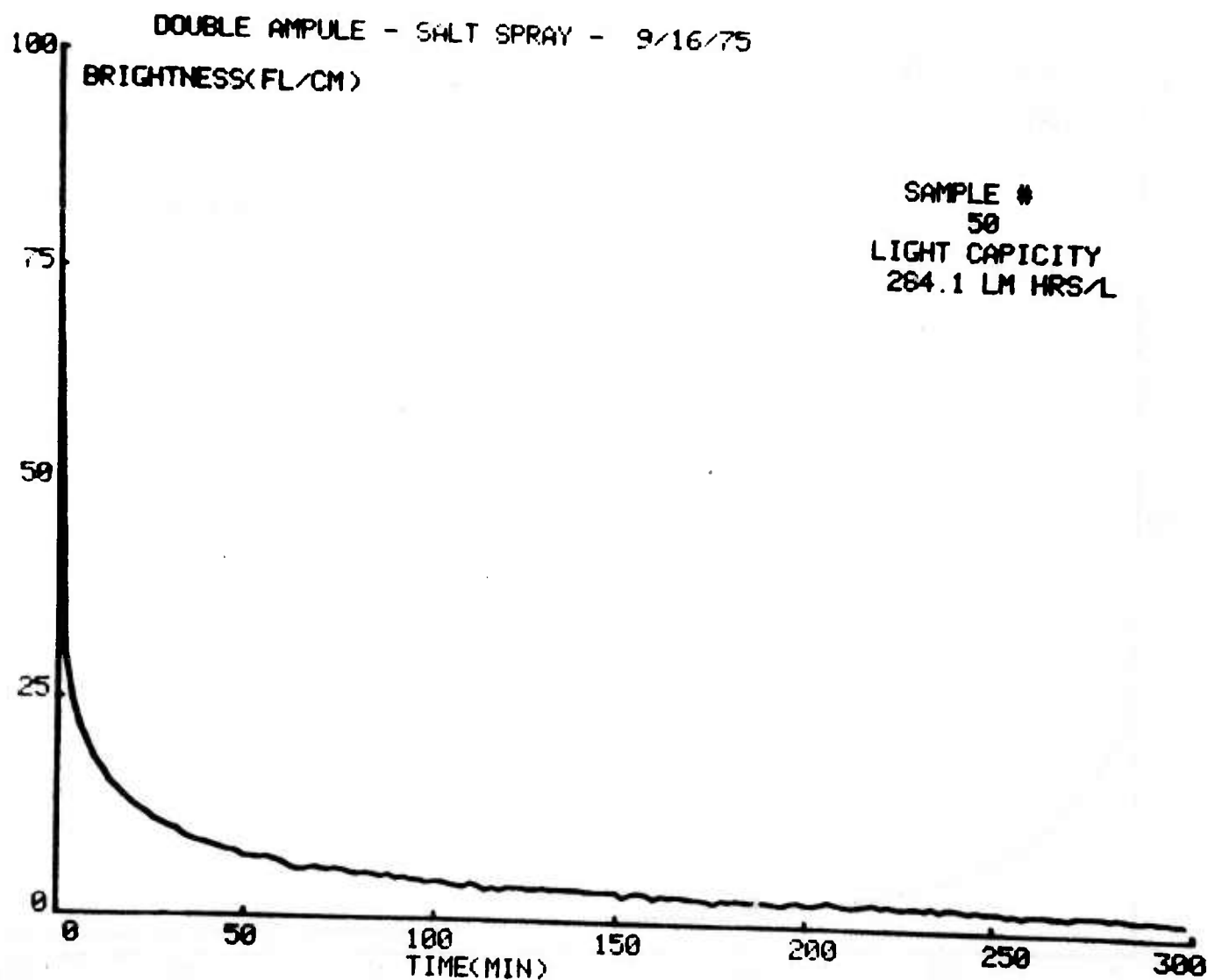


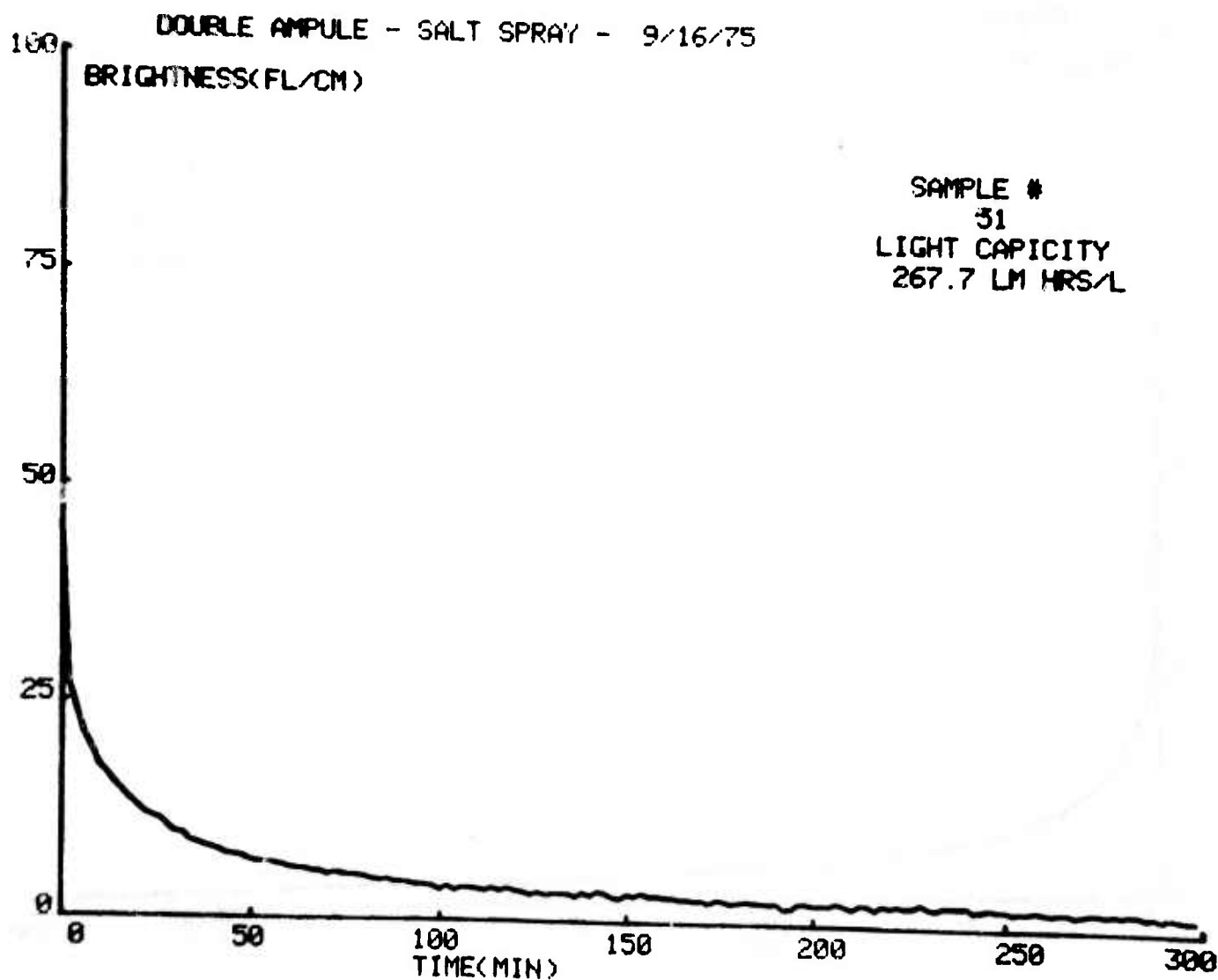


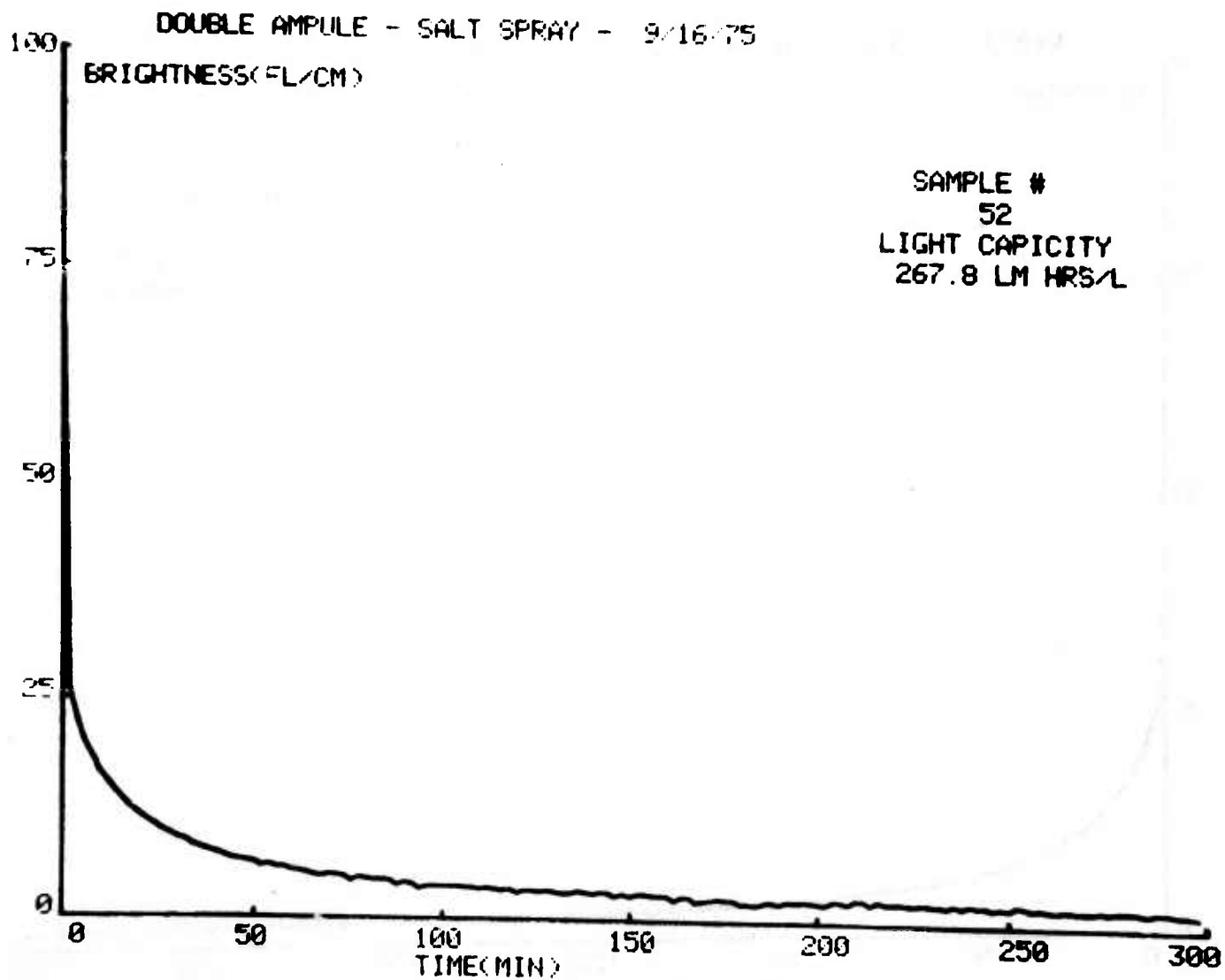


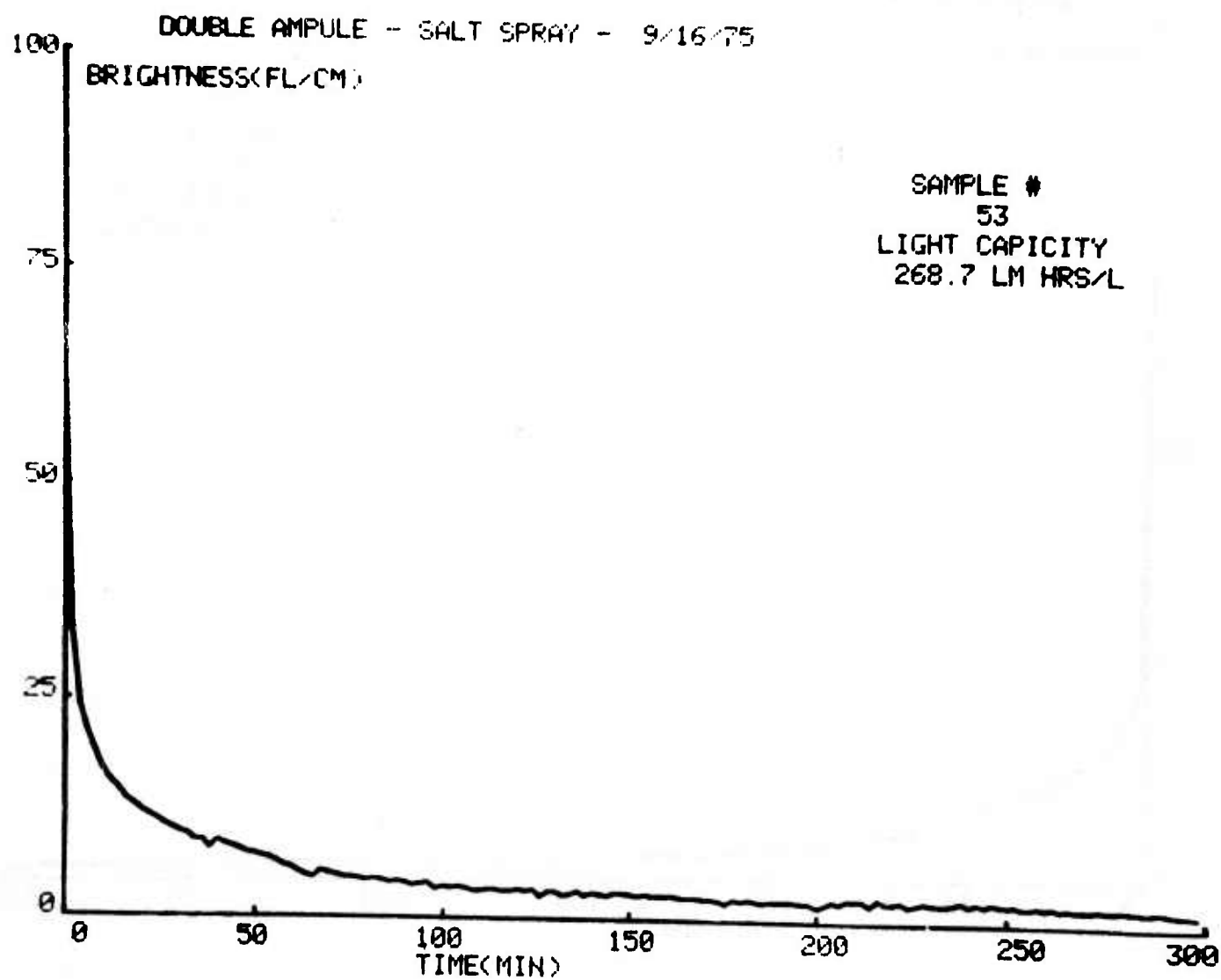


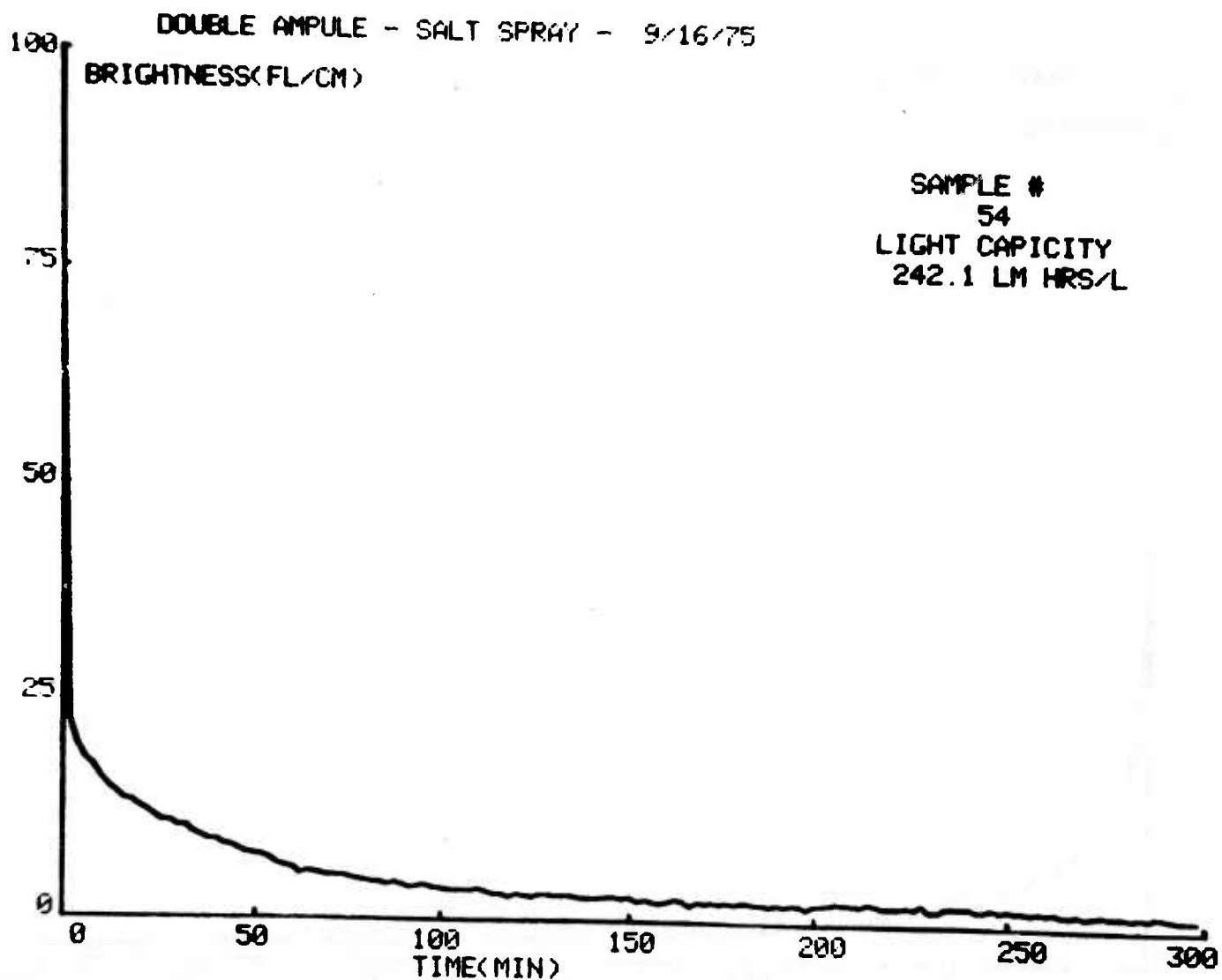


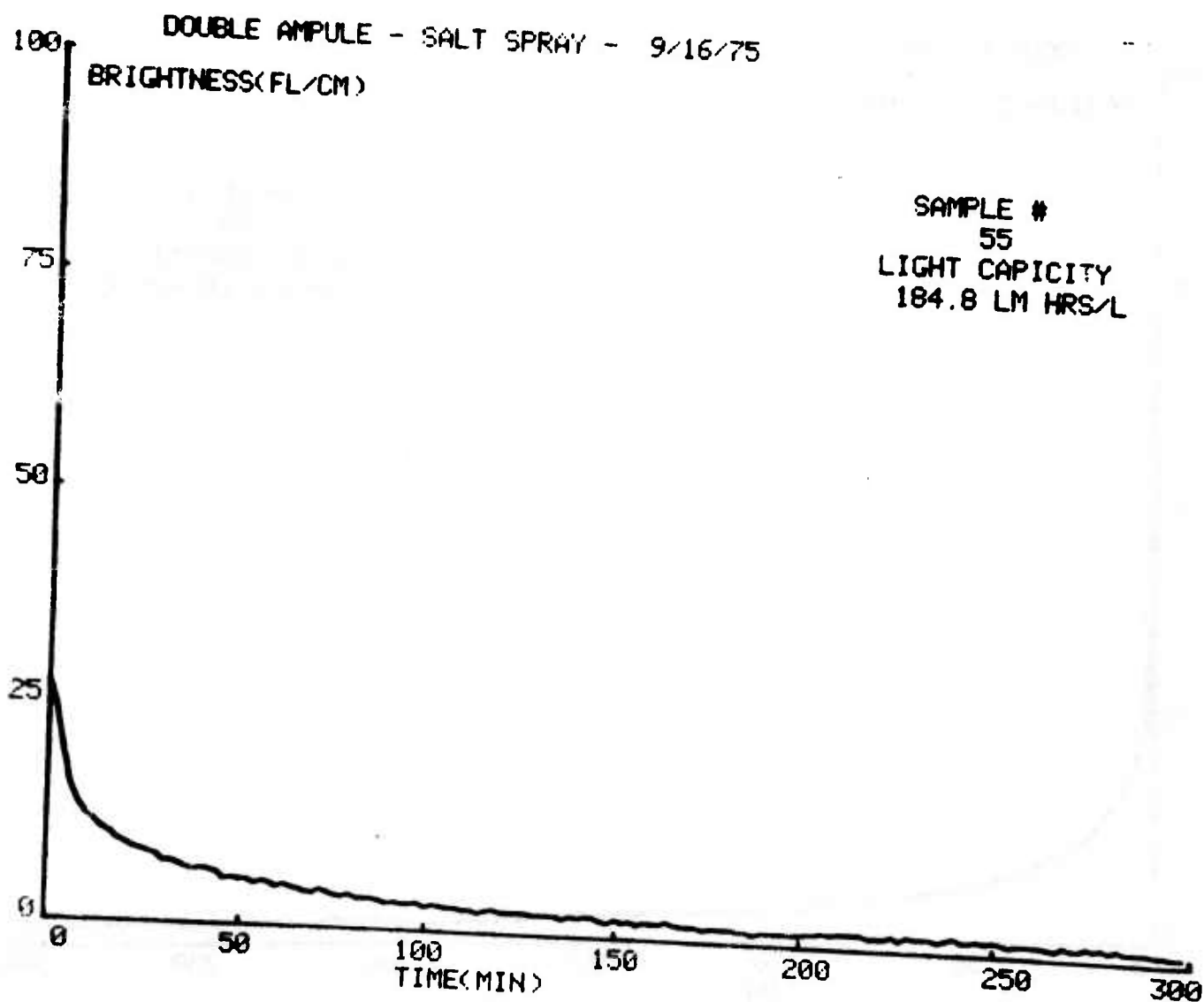




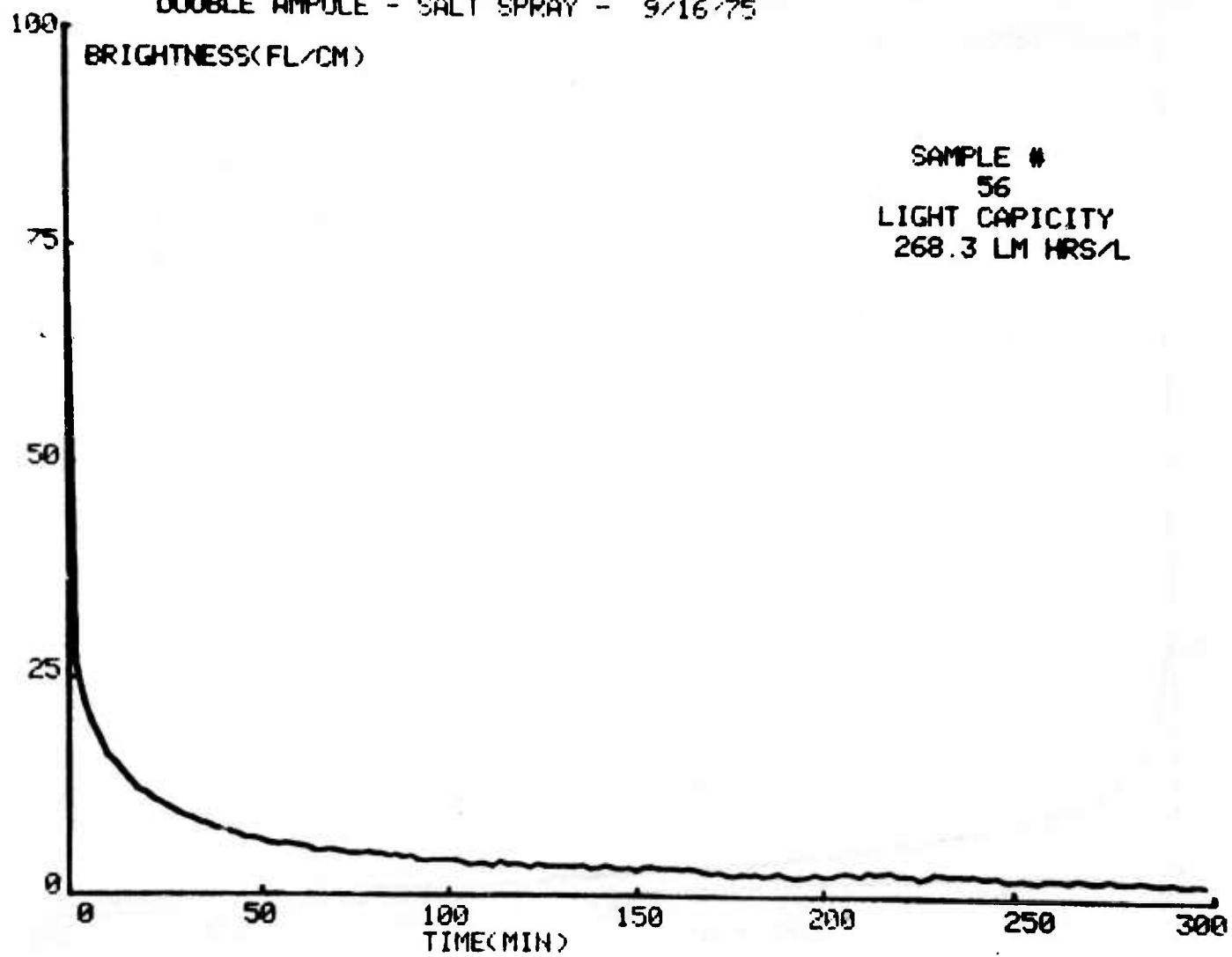




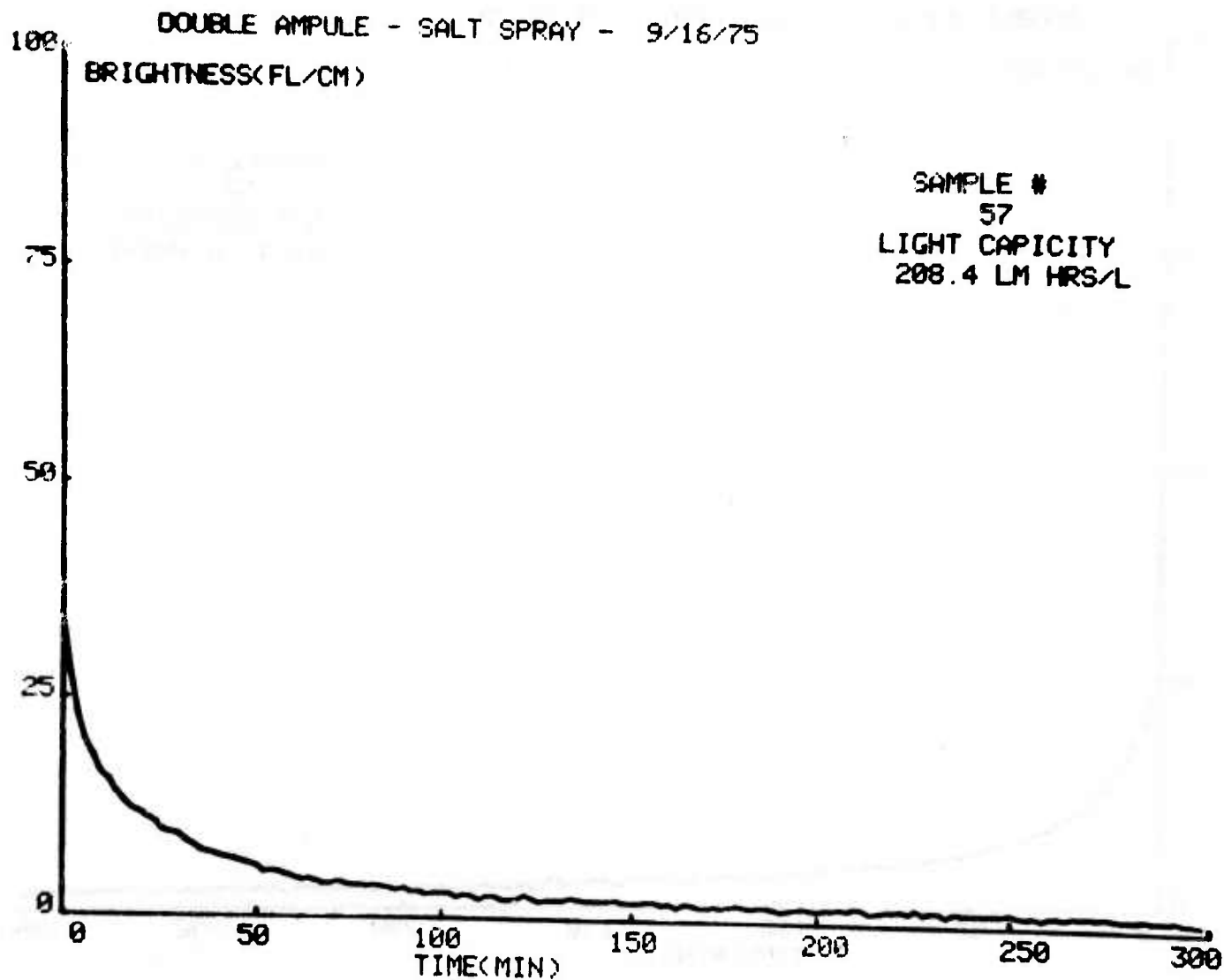


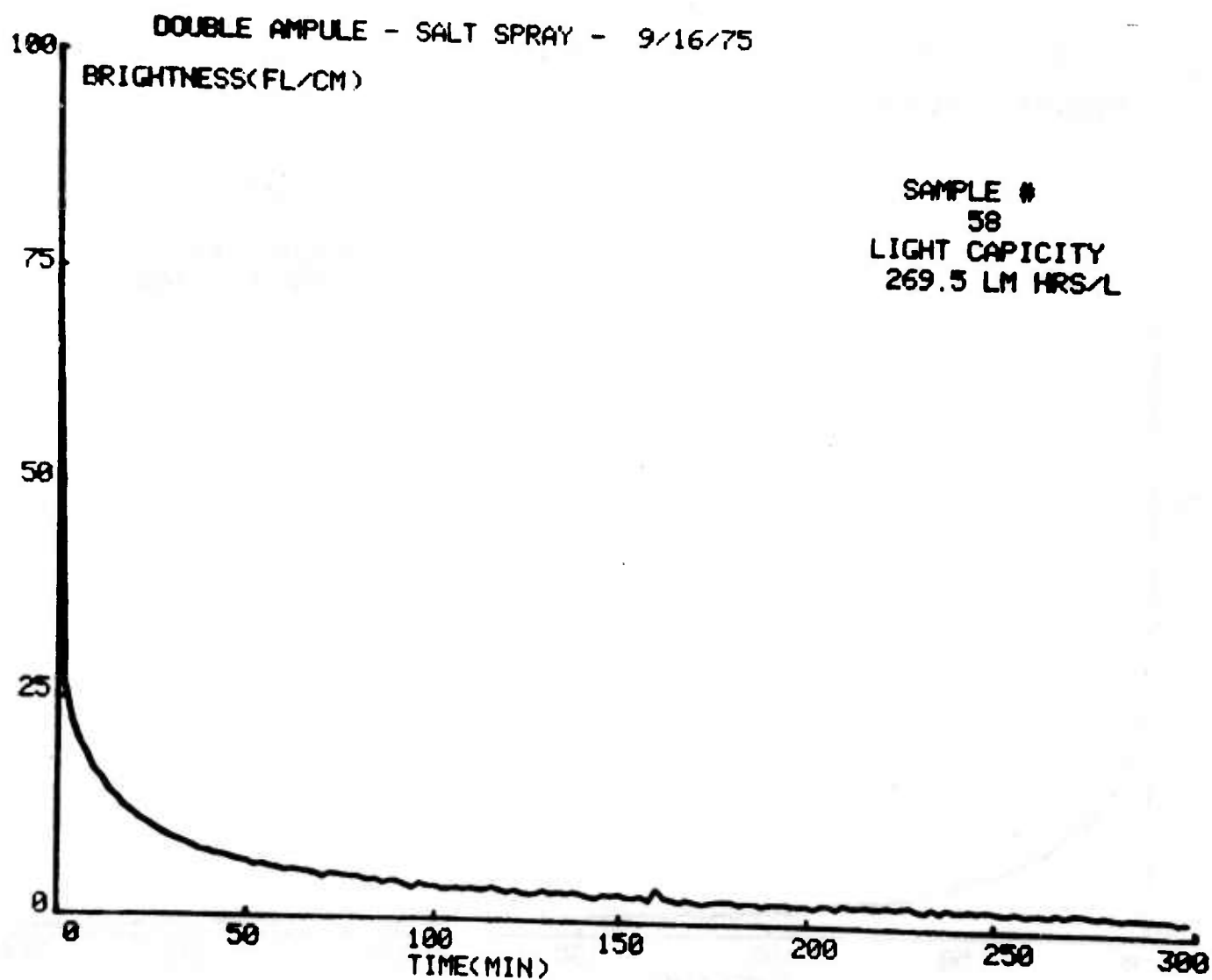


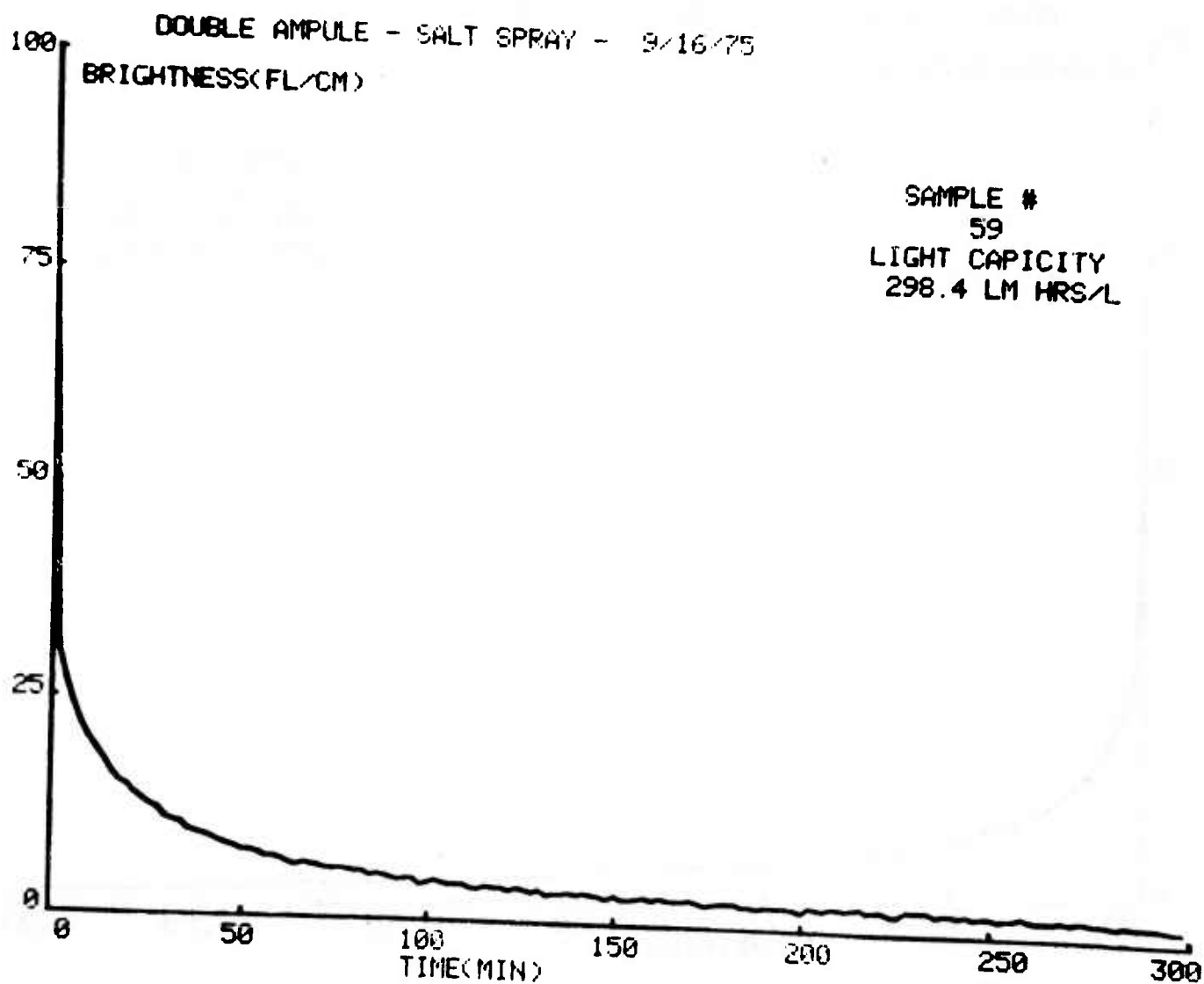
DOUBLE AMPULE - SALT SPRAY - 9/16/75

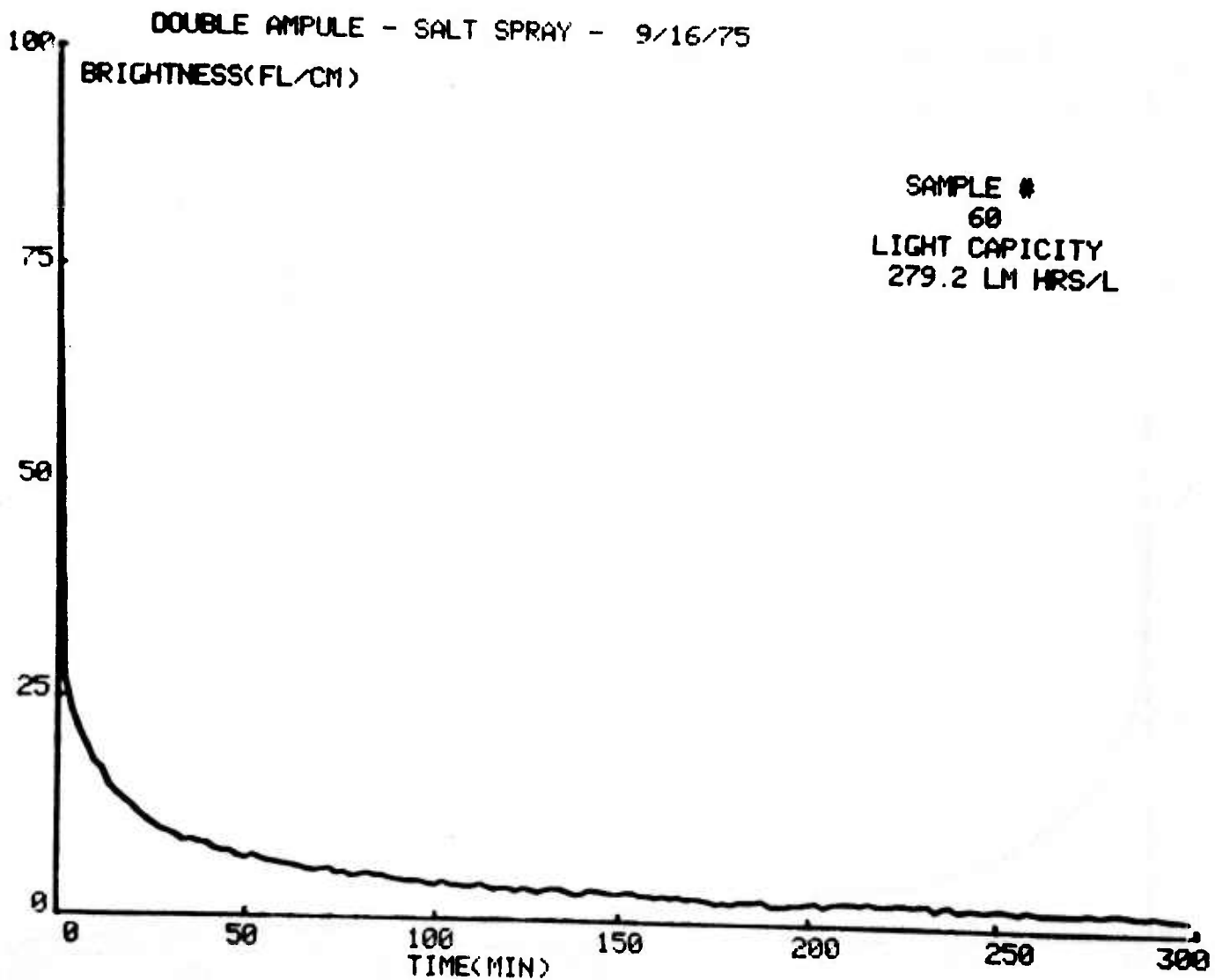


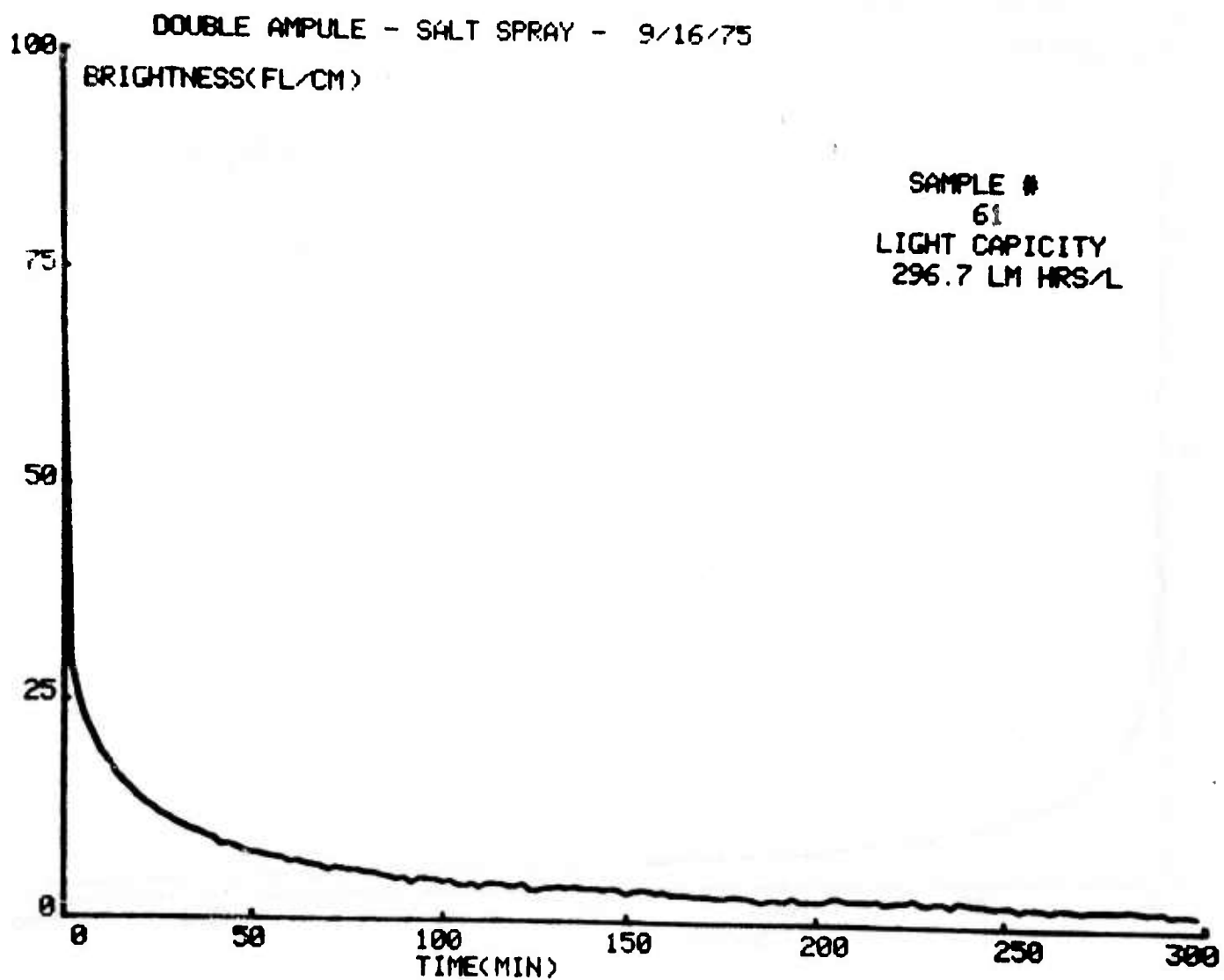


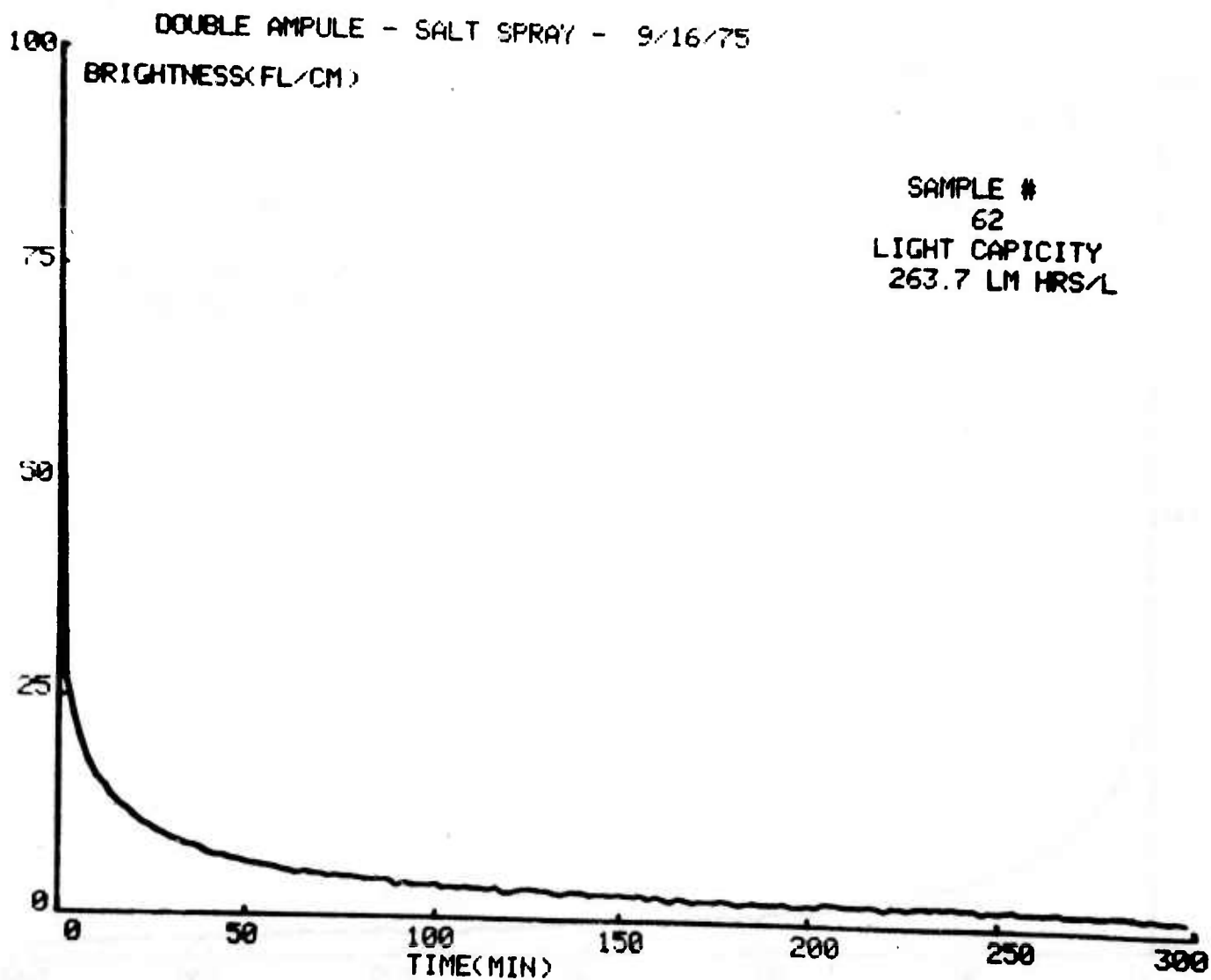


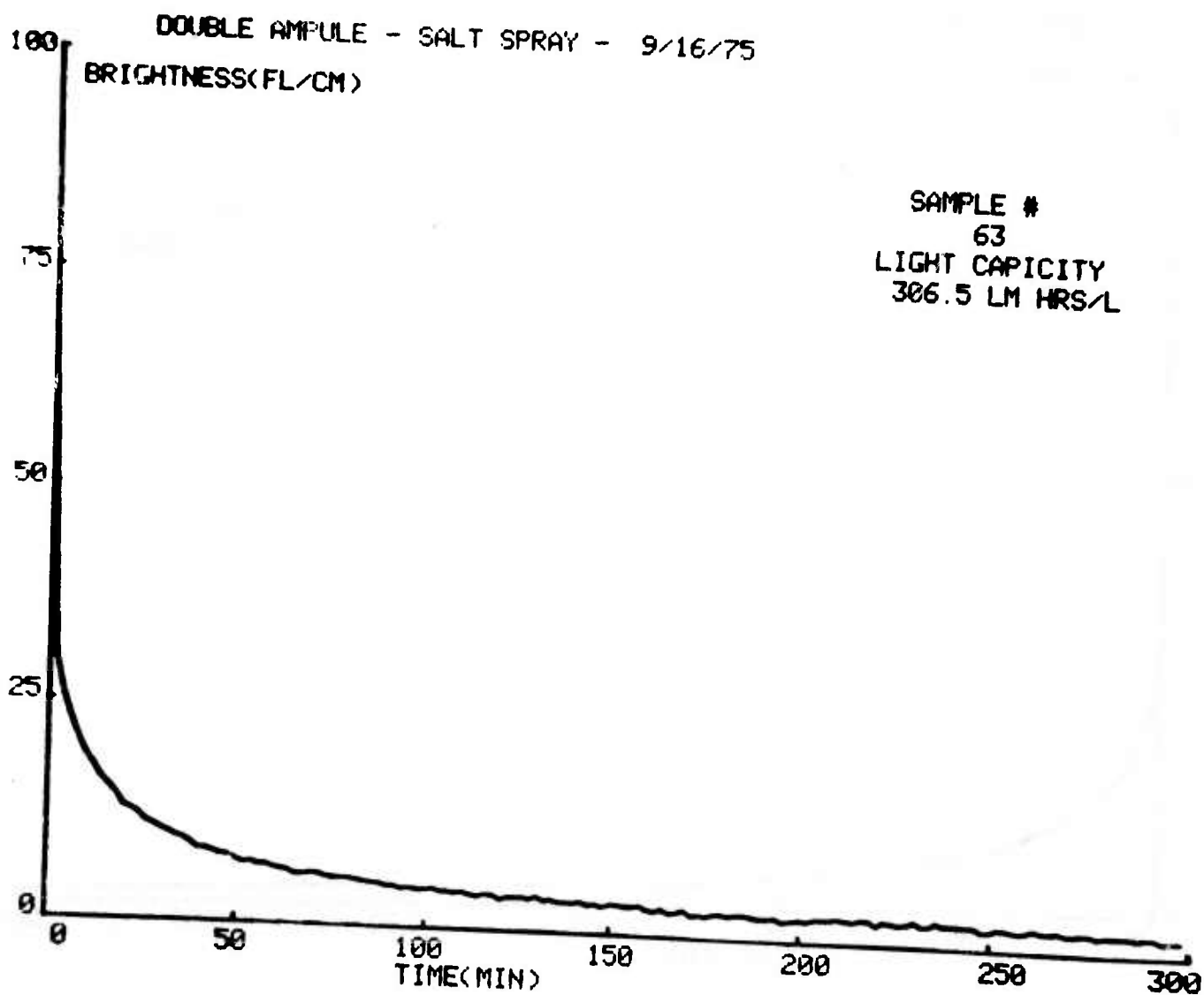




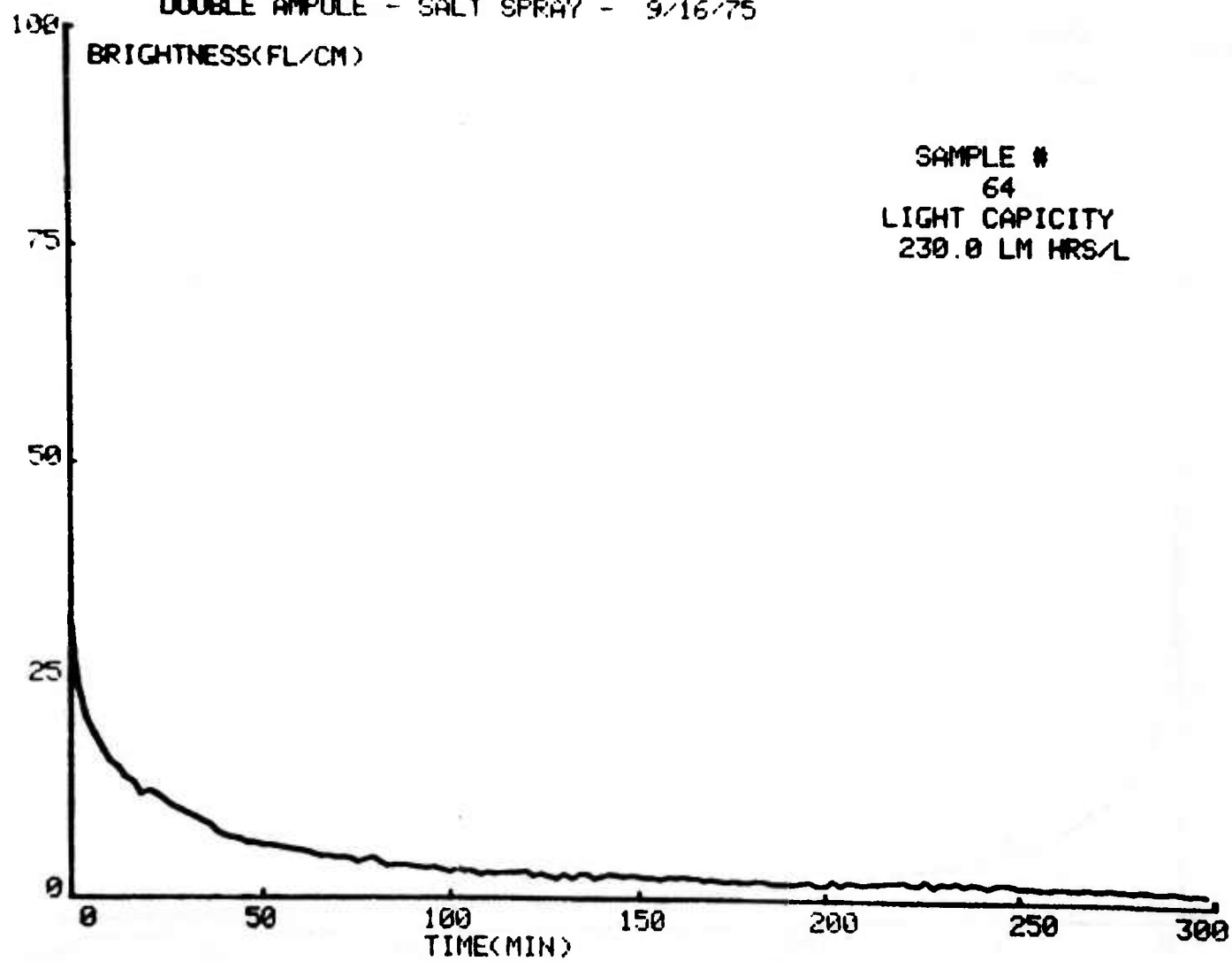




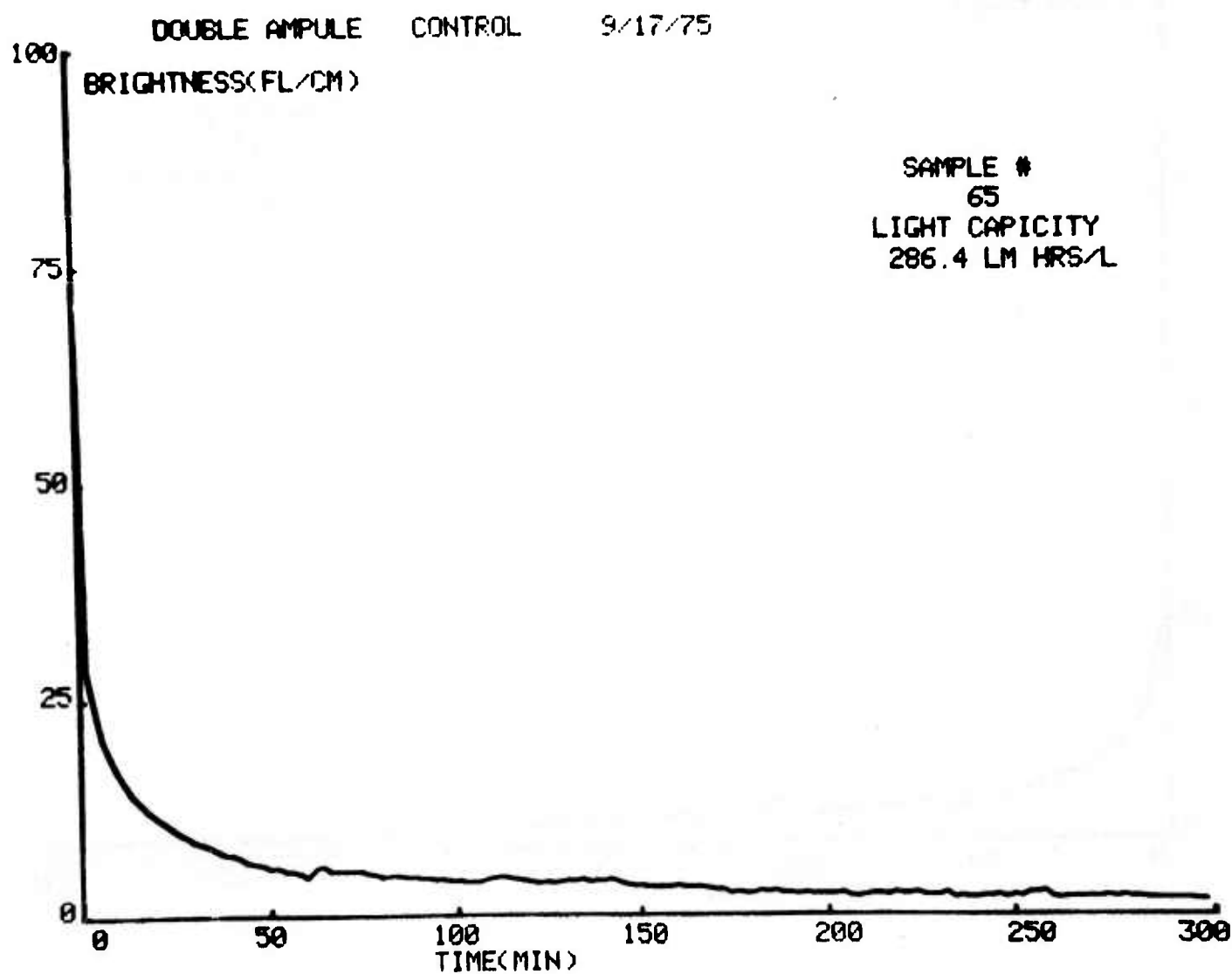




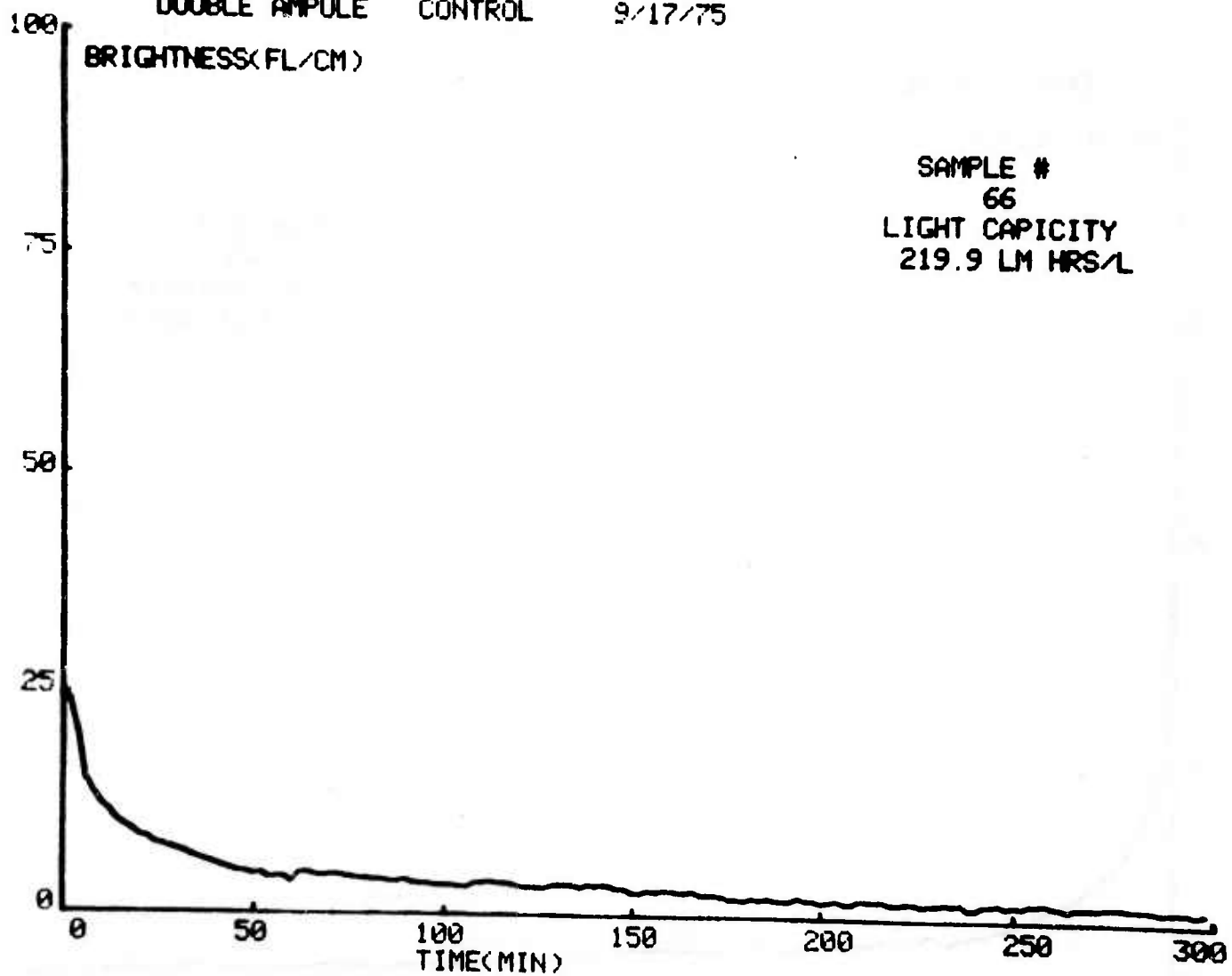
DOUBLE AMPULE - SALT SPRAY - 9/16/75

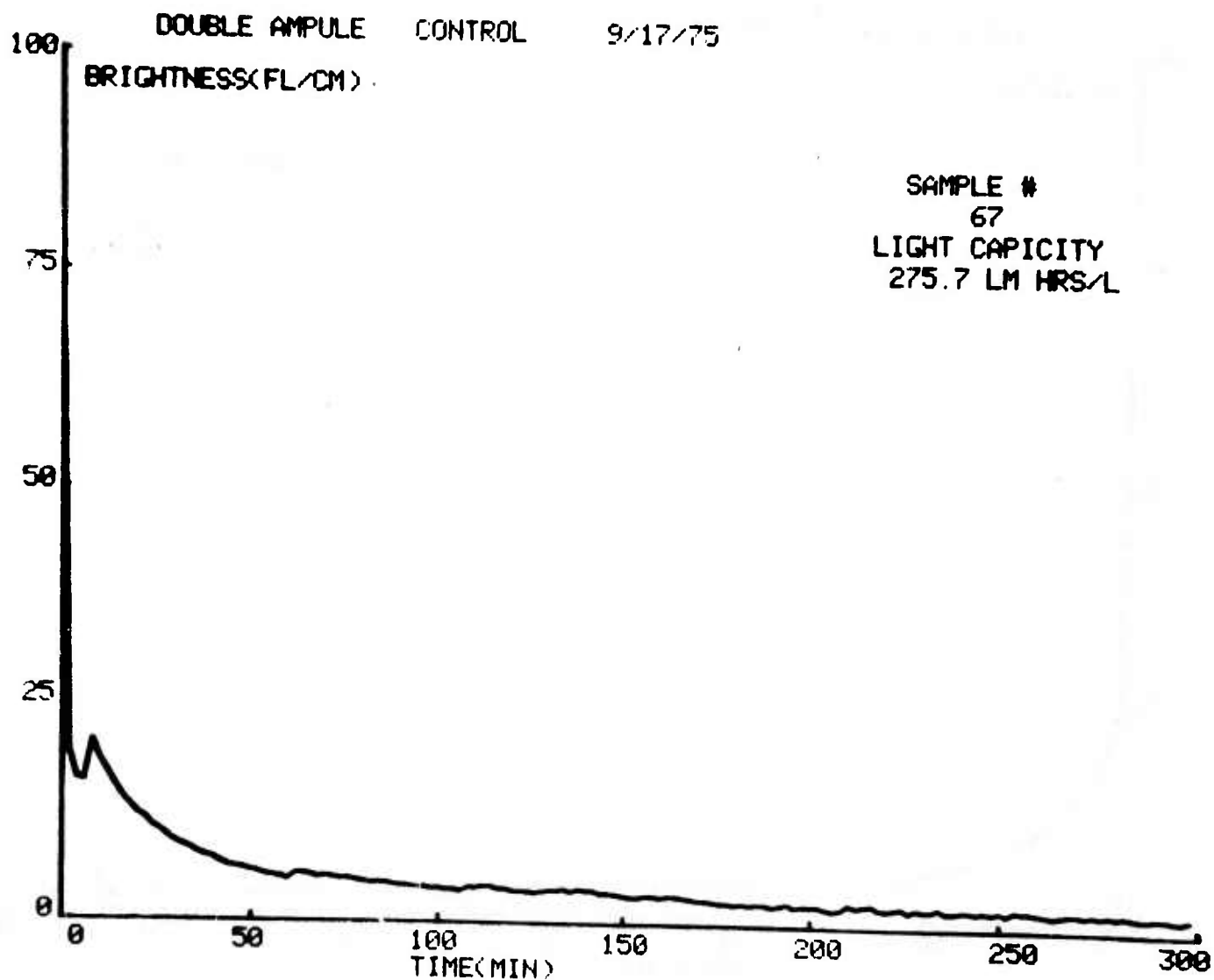


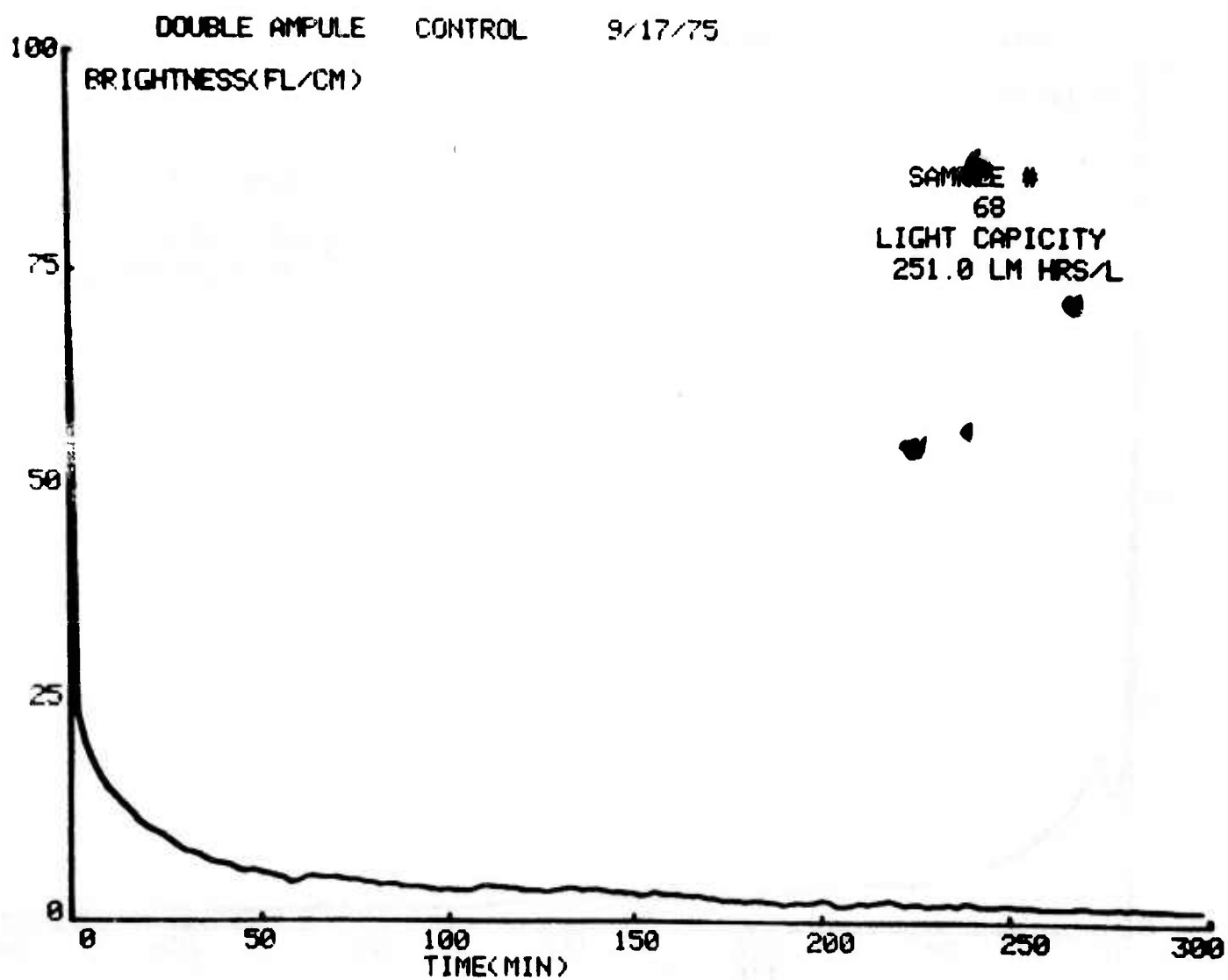


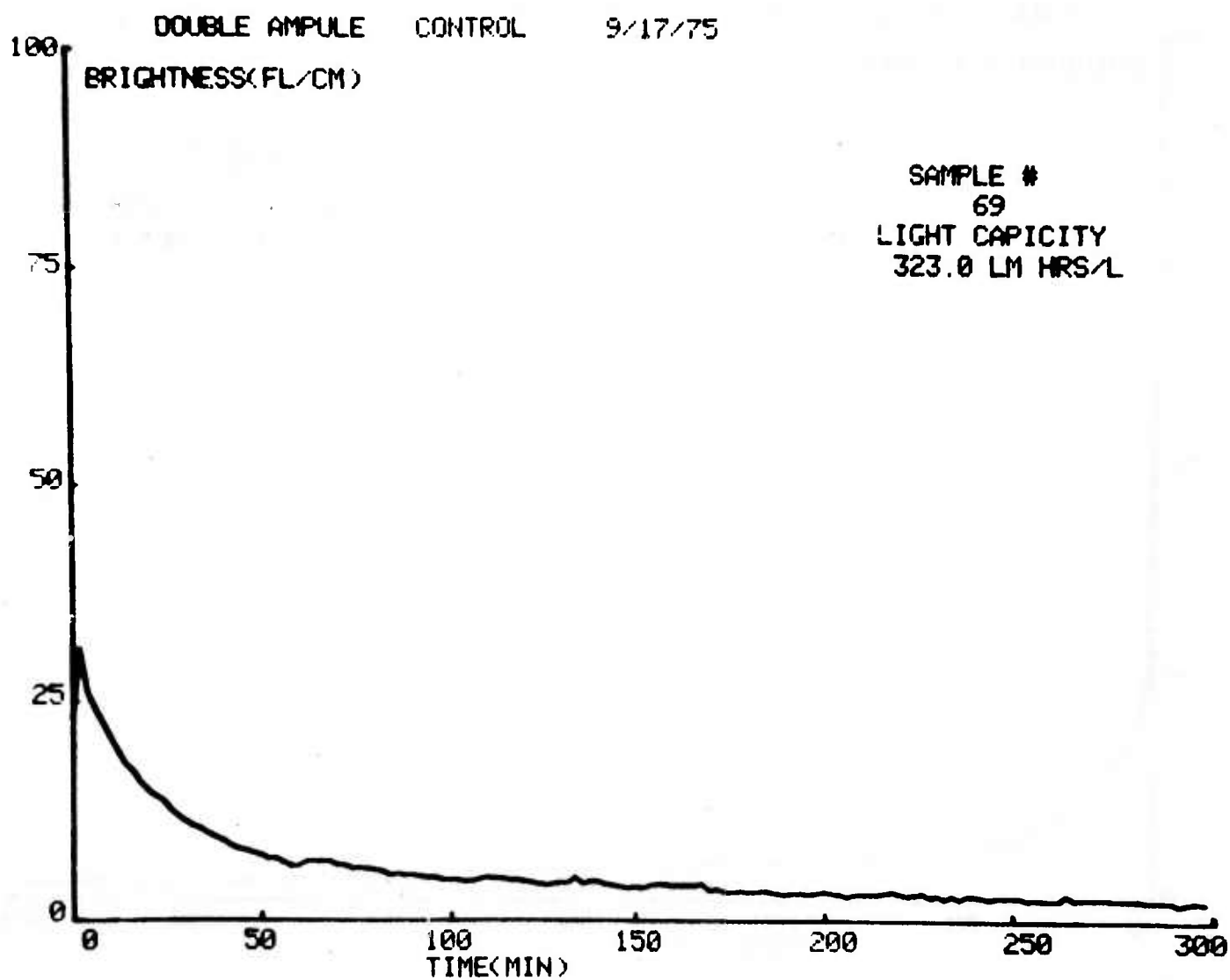


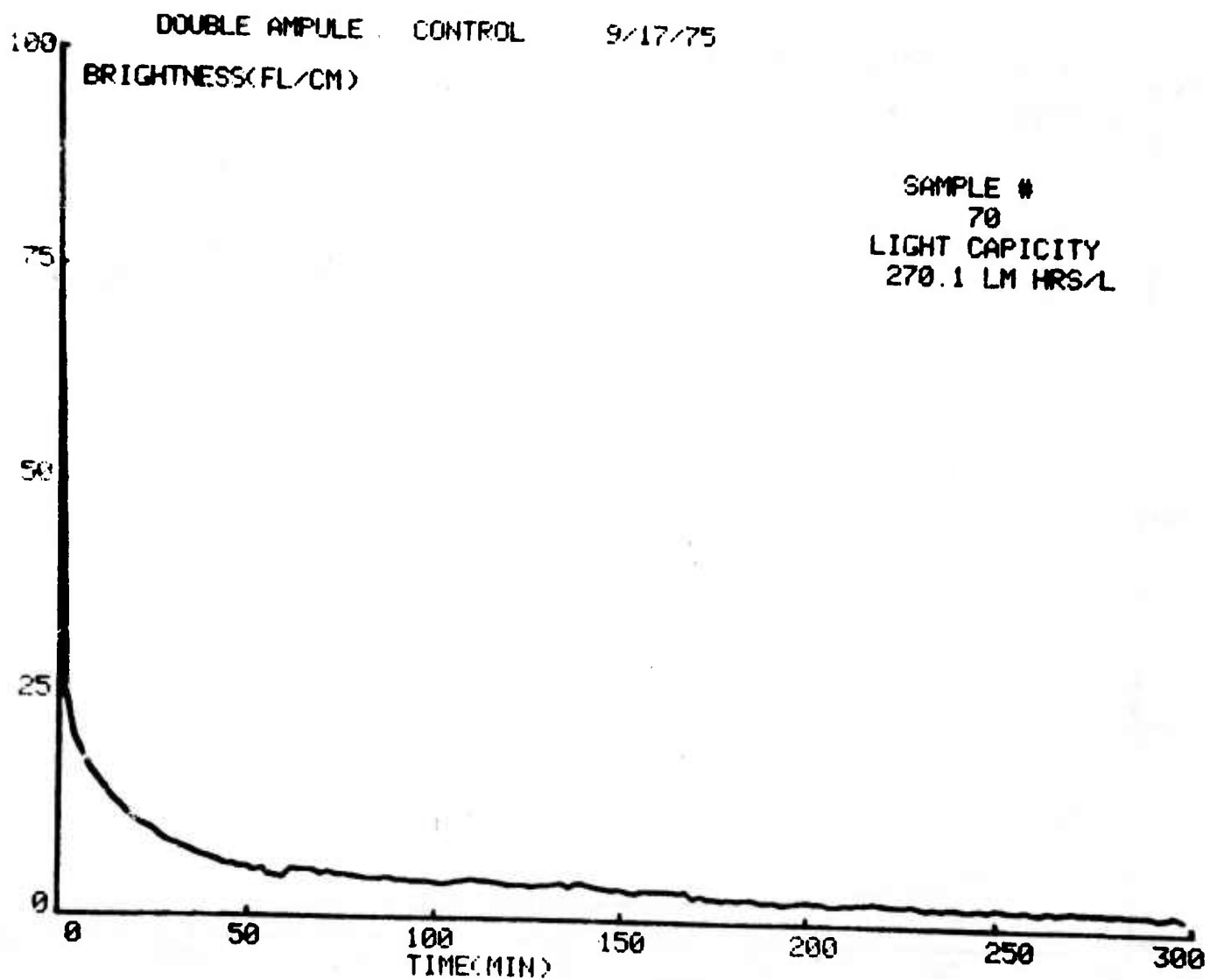
DOUBLE AMPULE CONTROL 9/17/75

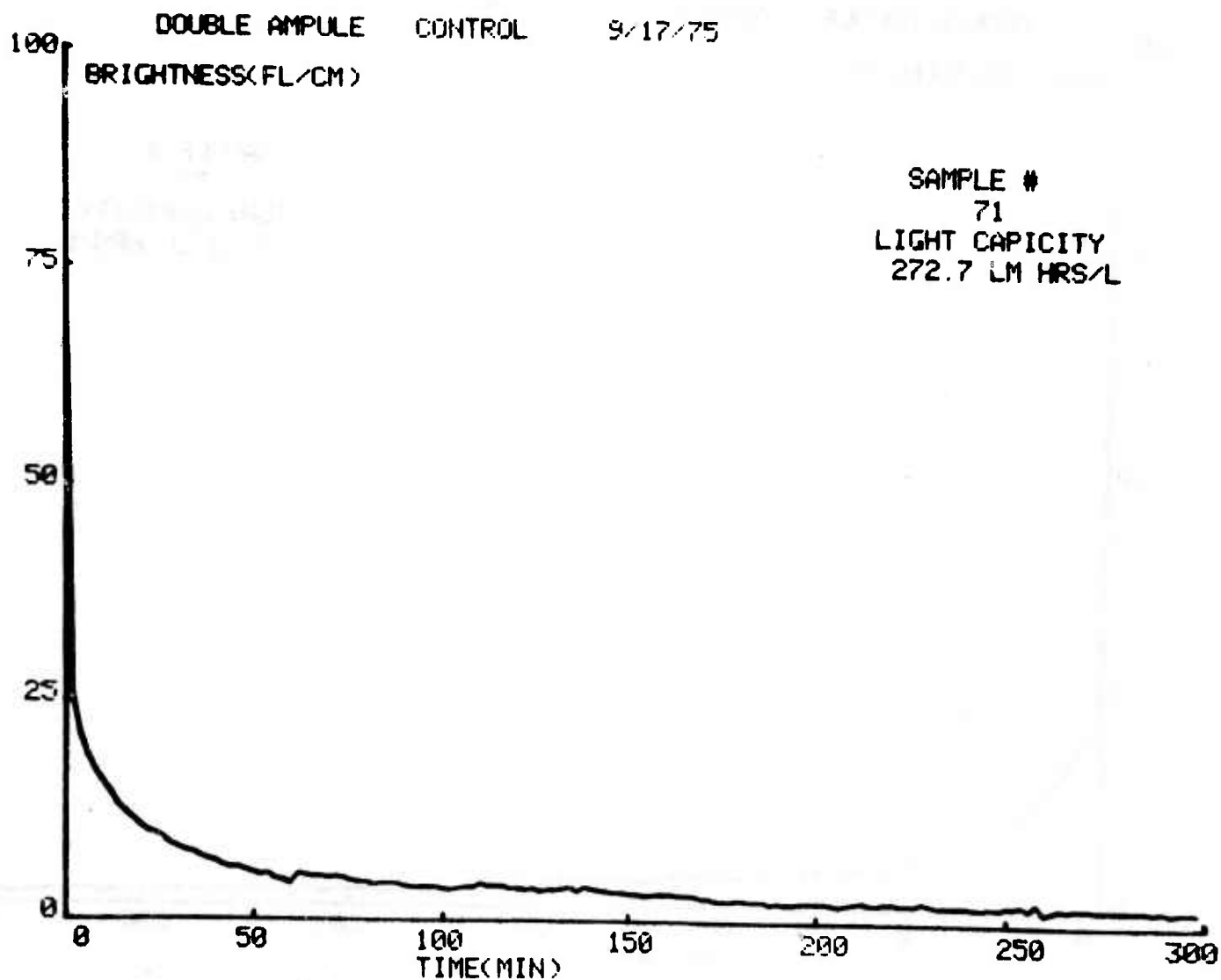


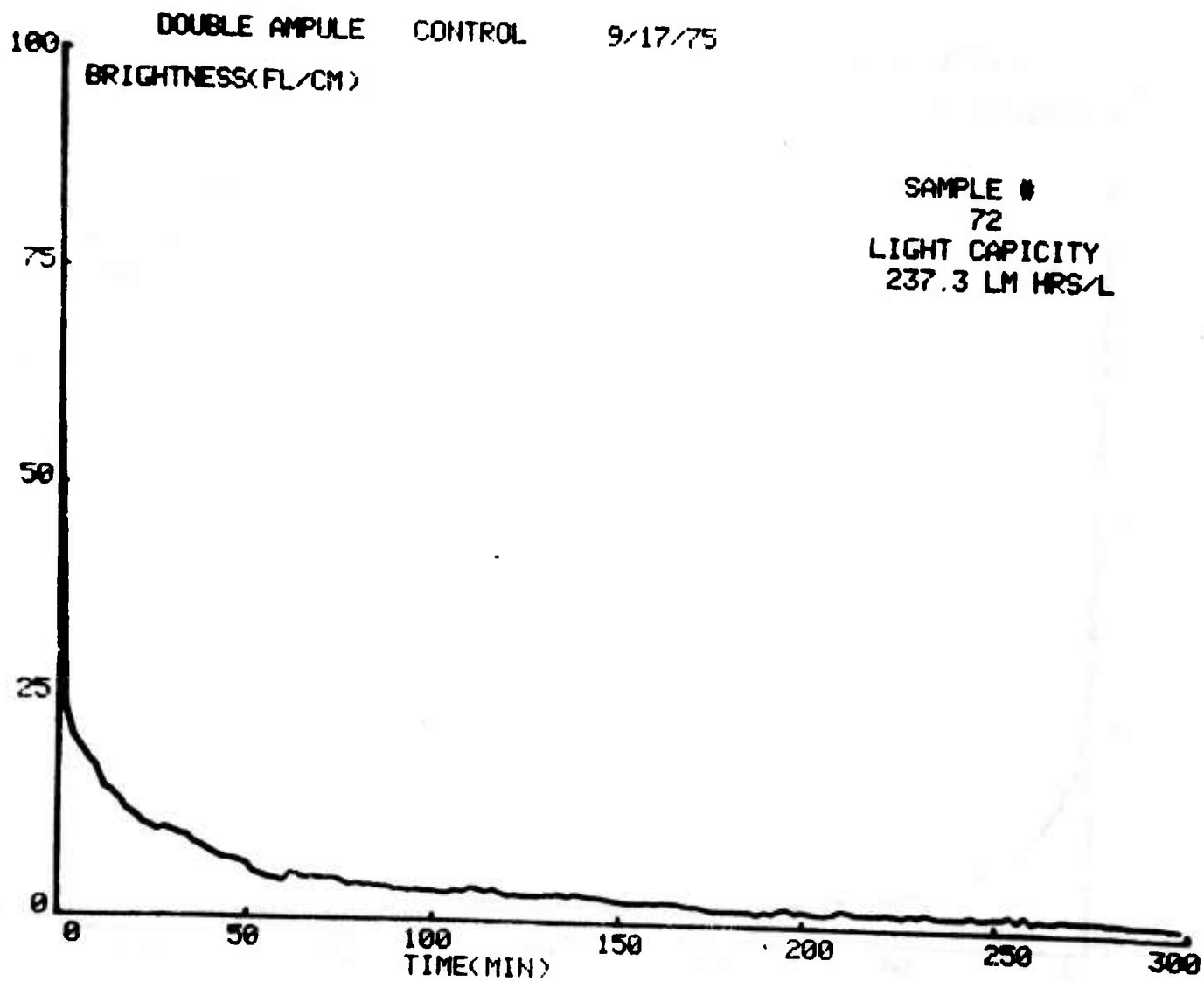




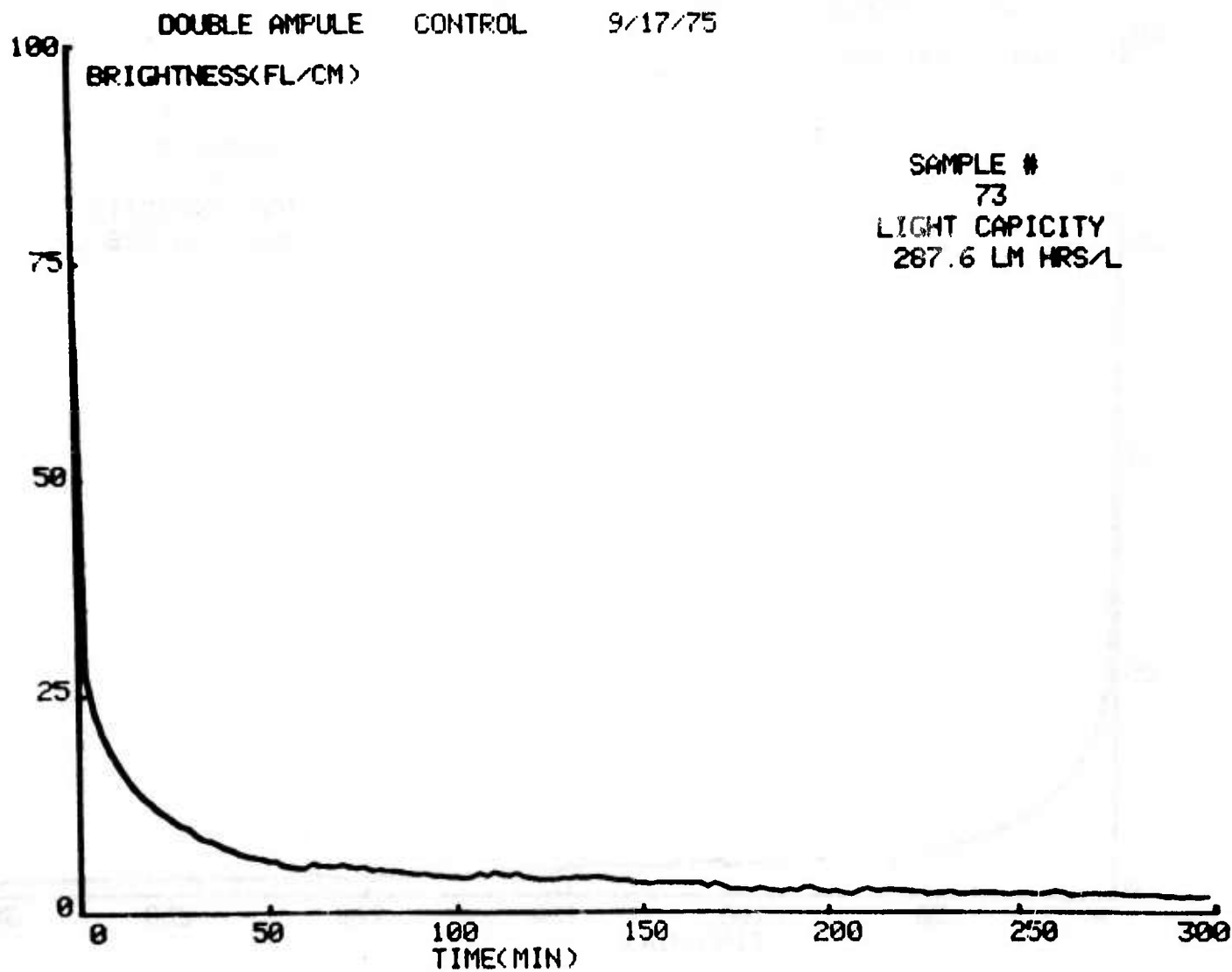


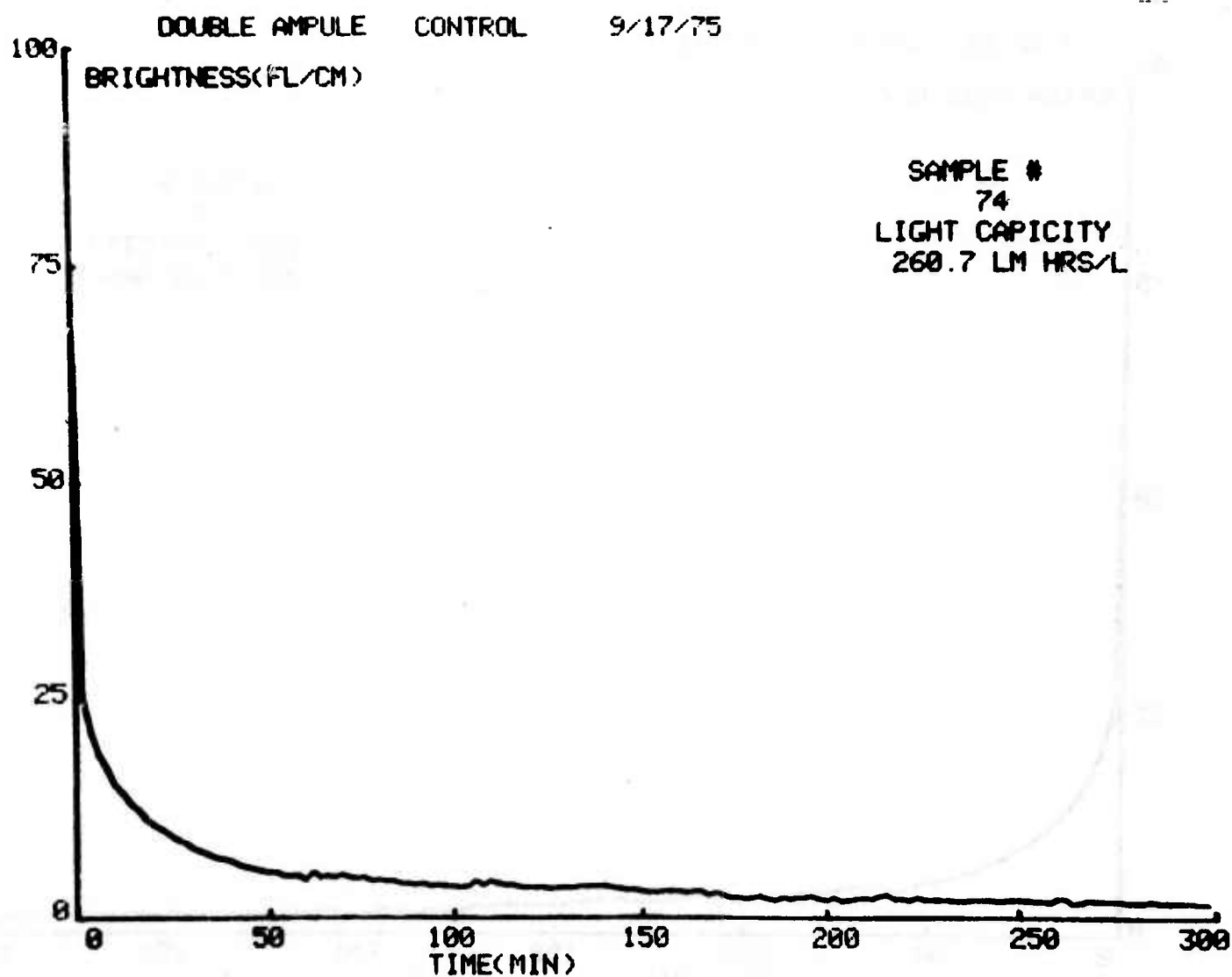


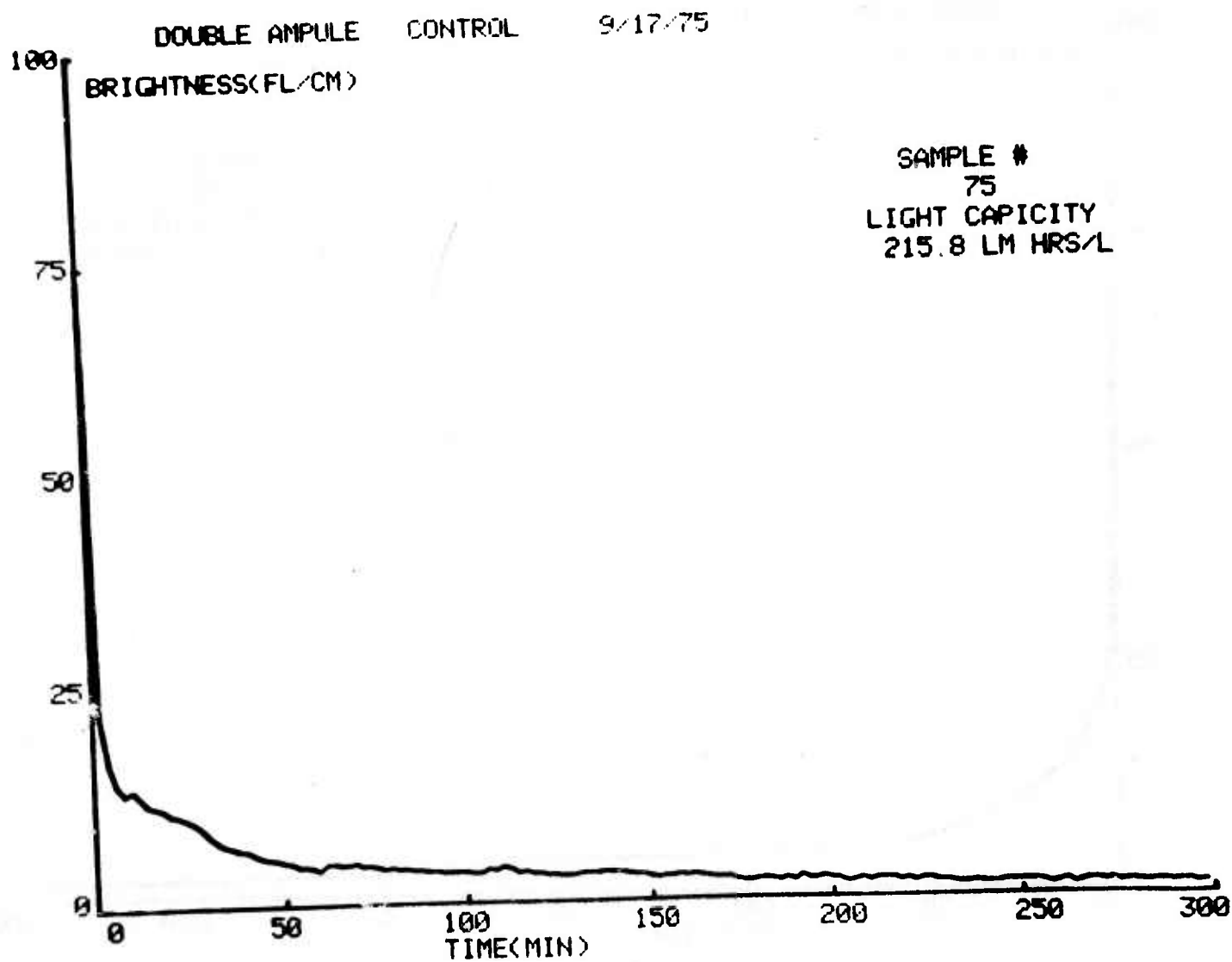


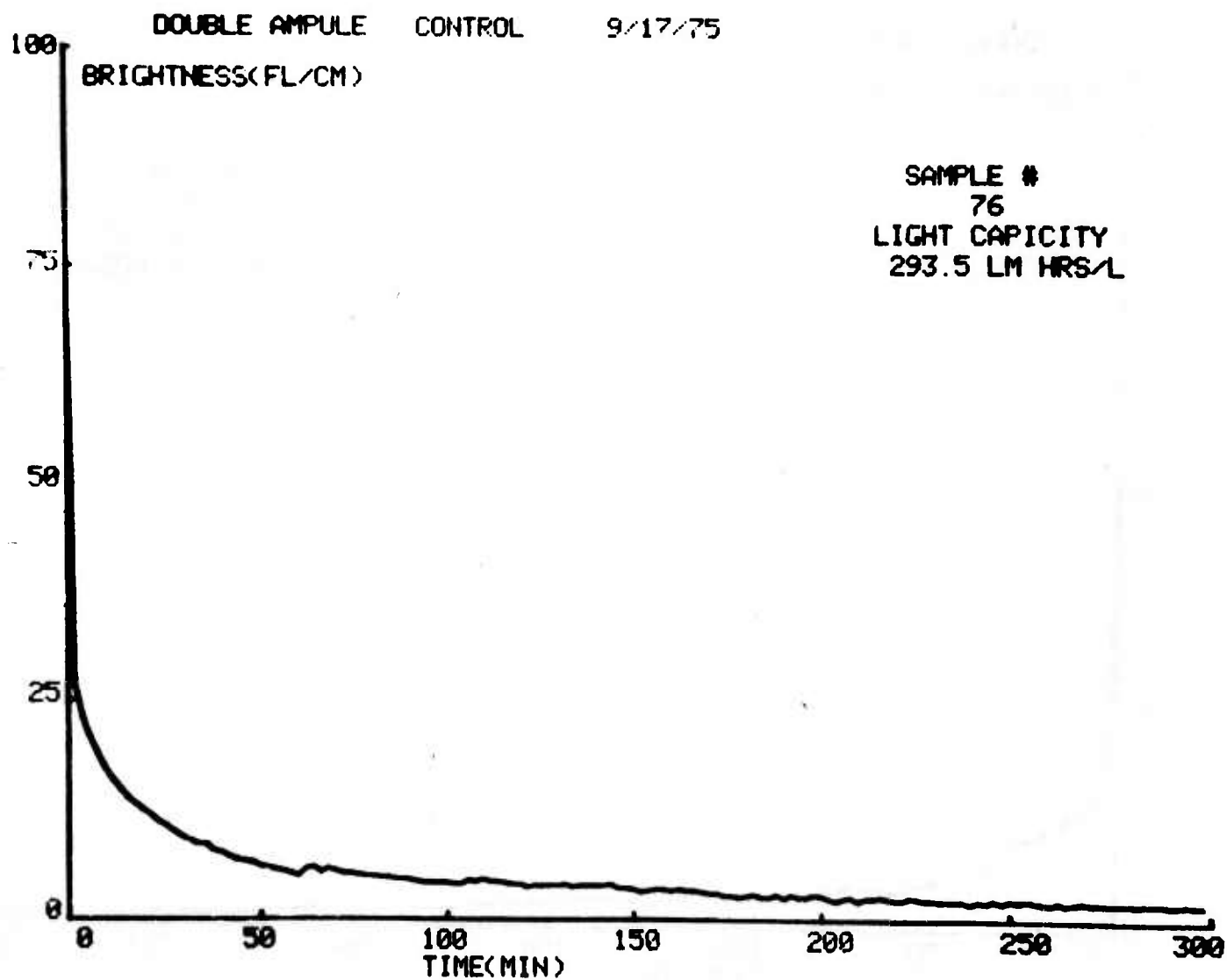


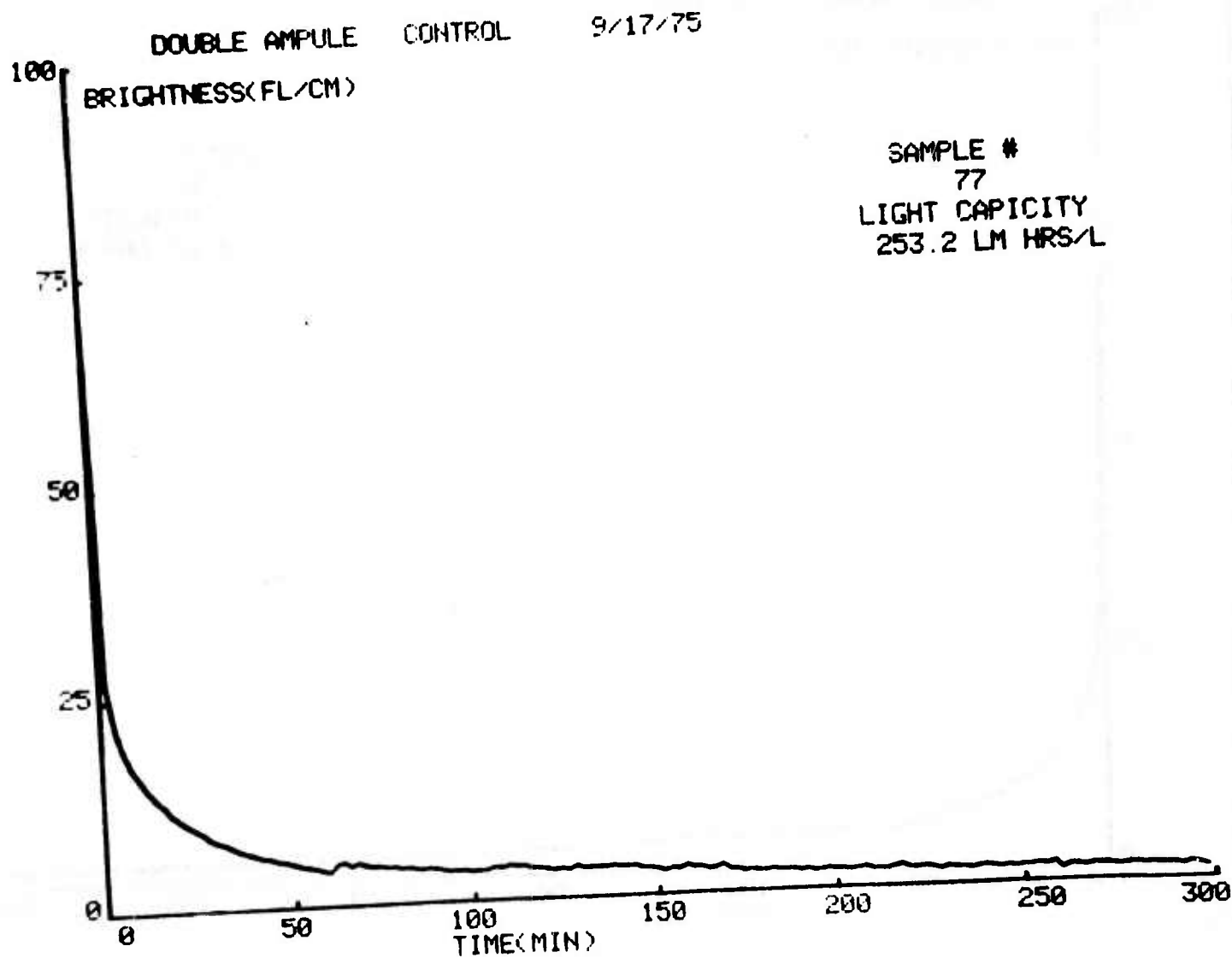


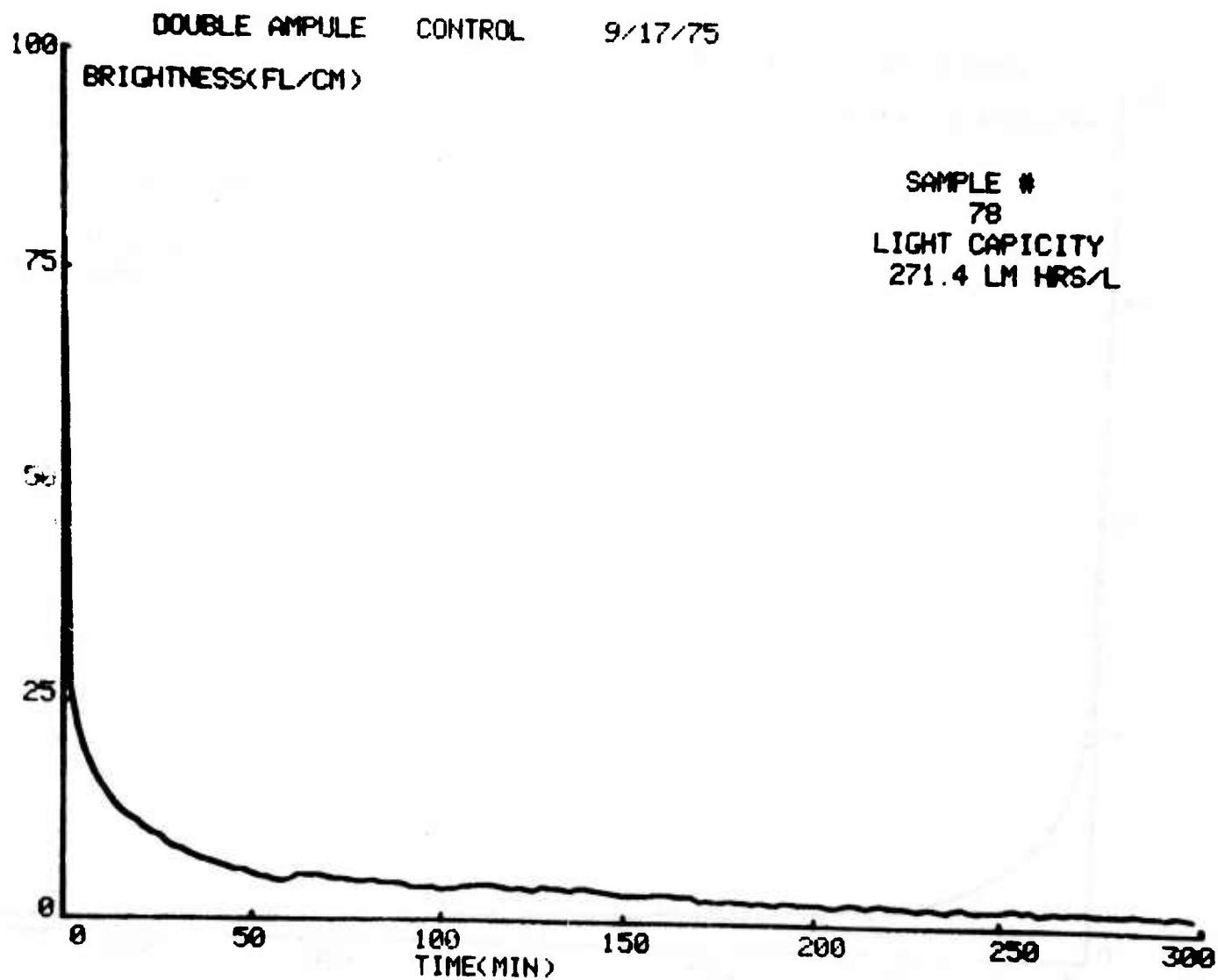


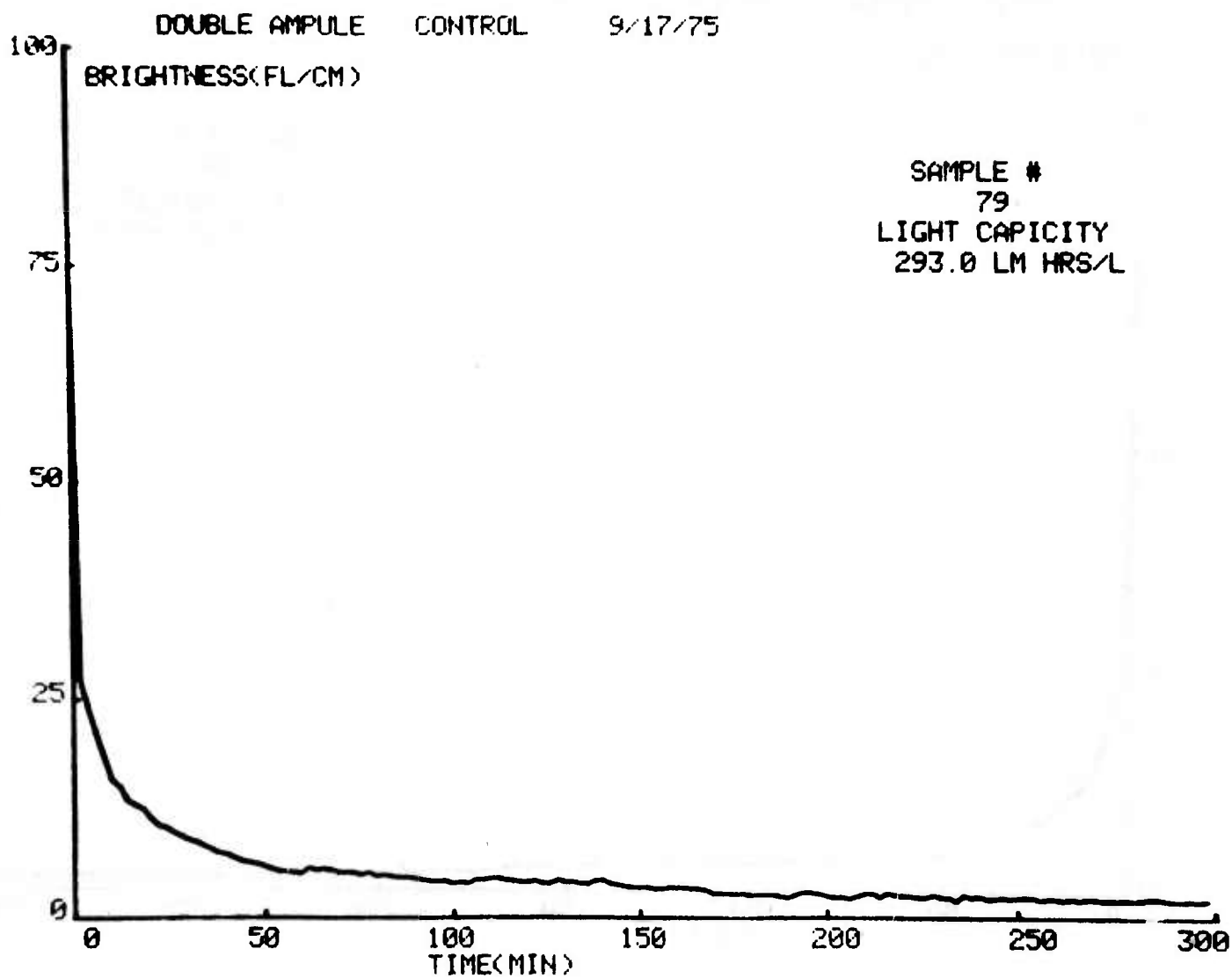




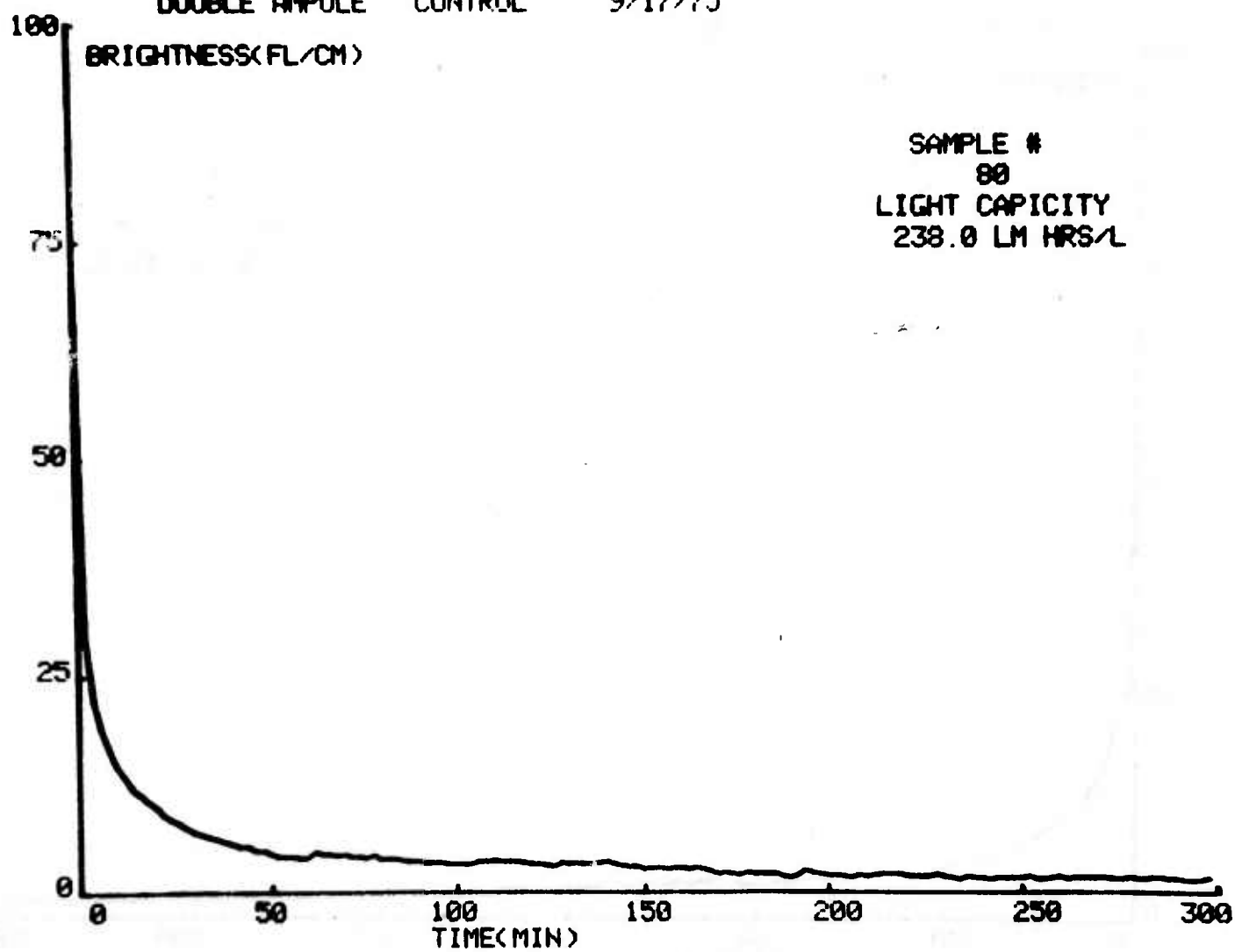




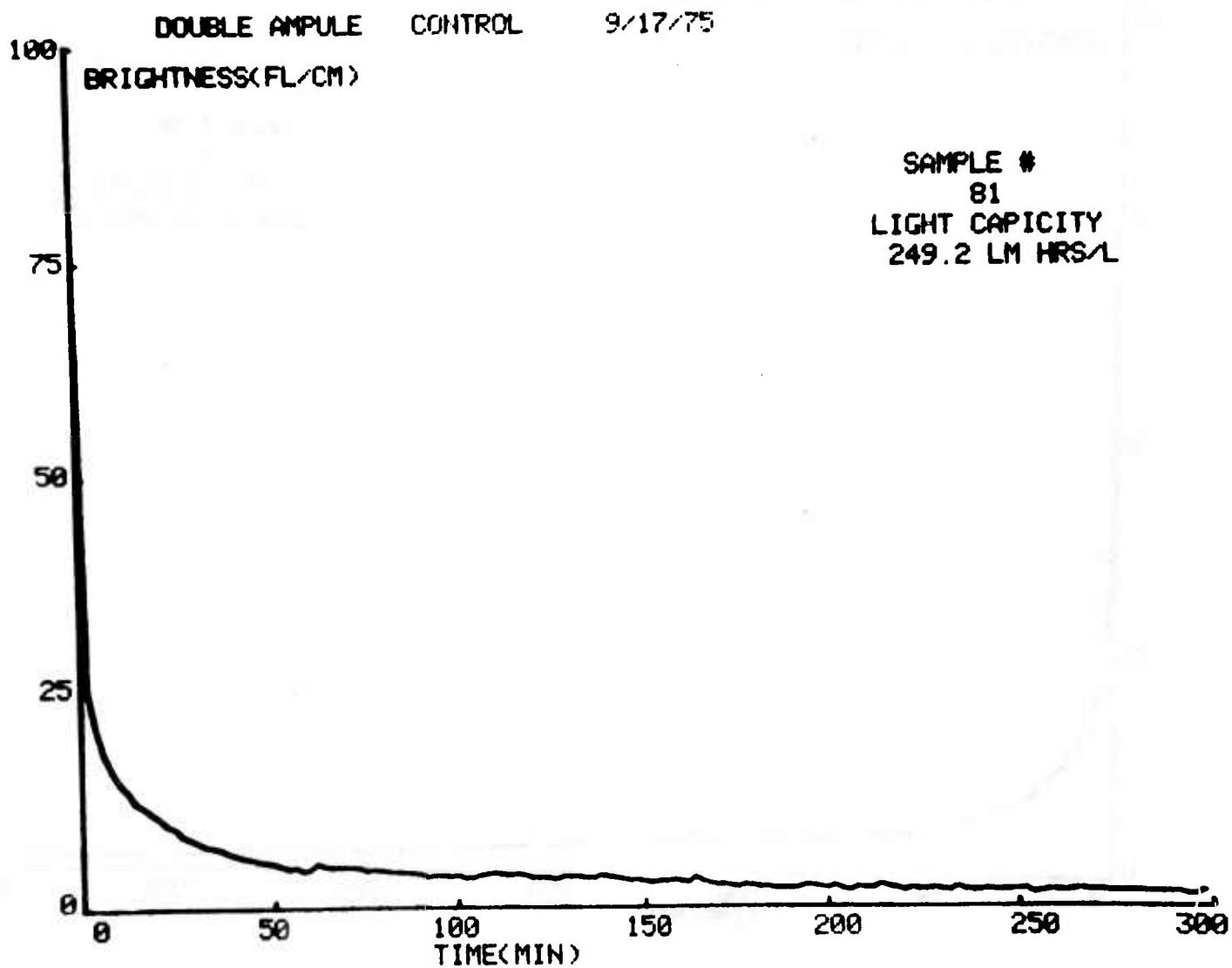


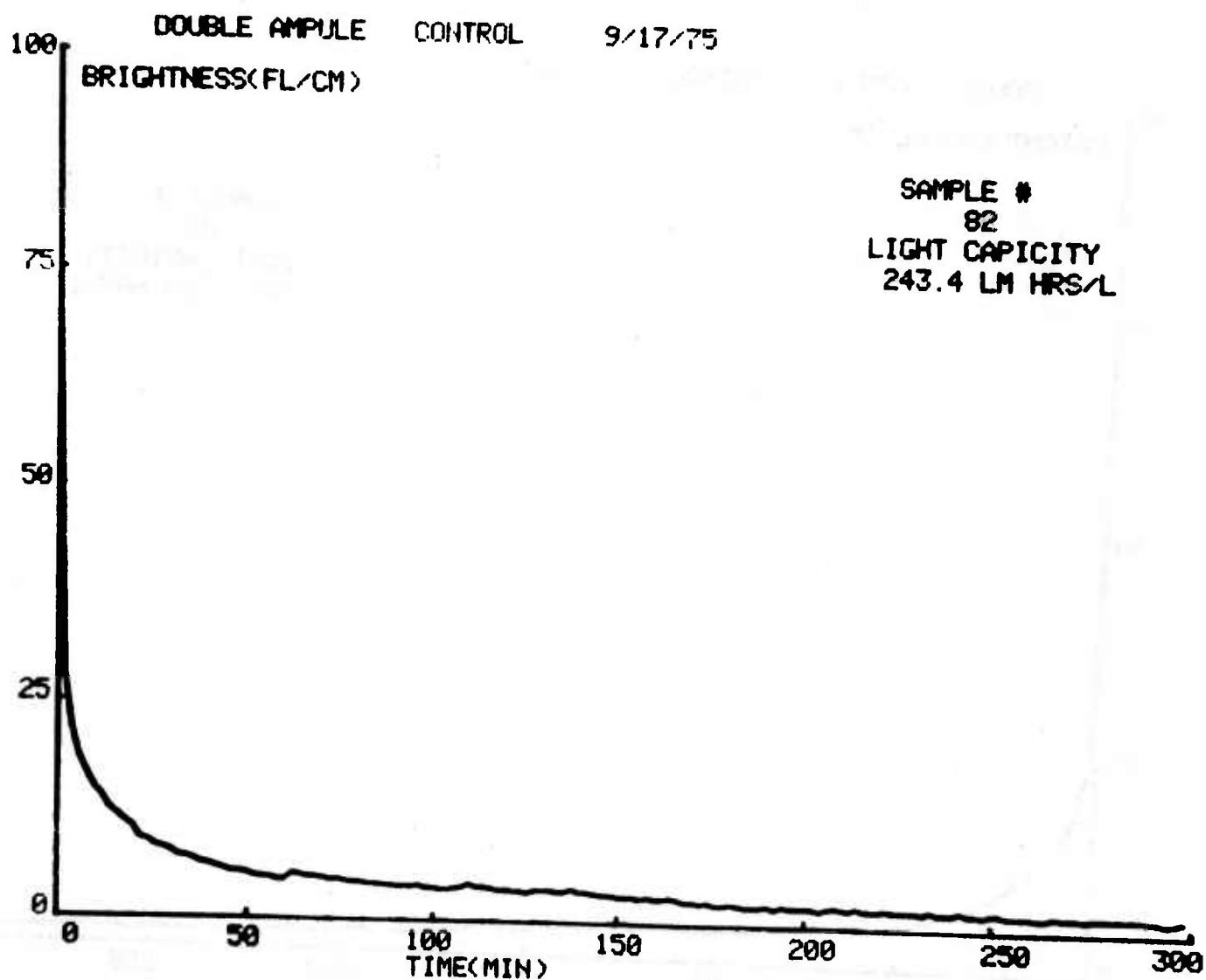


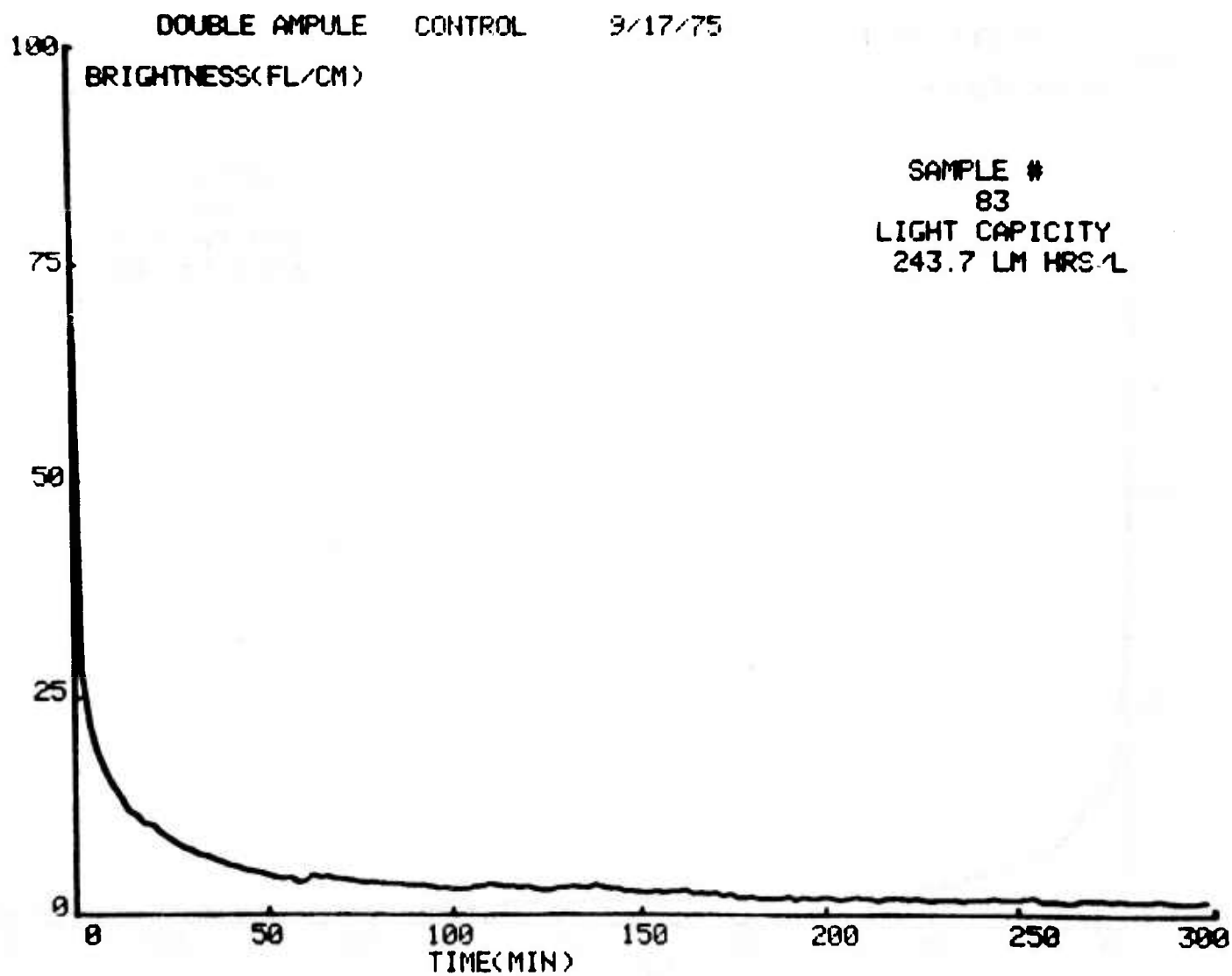
DOUBLE AMPULE CONTROL 9/17/75

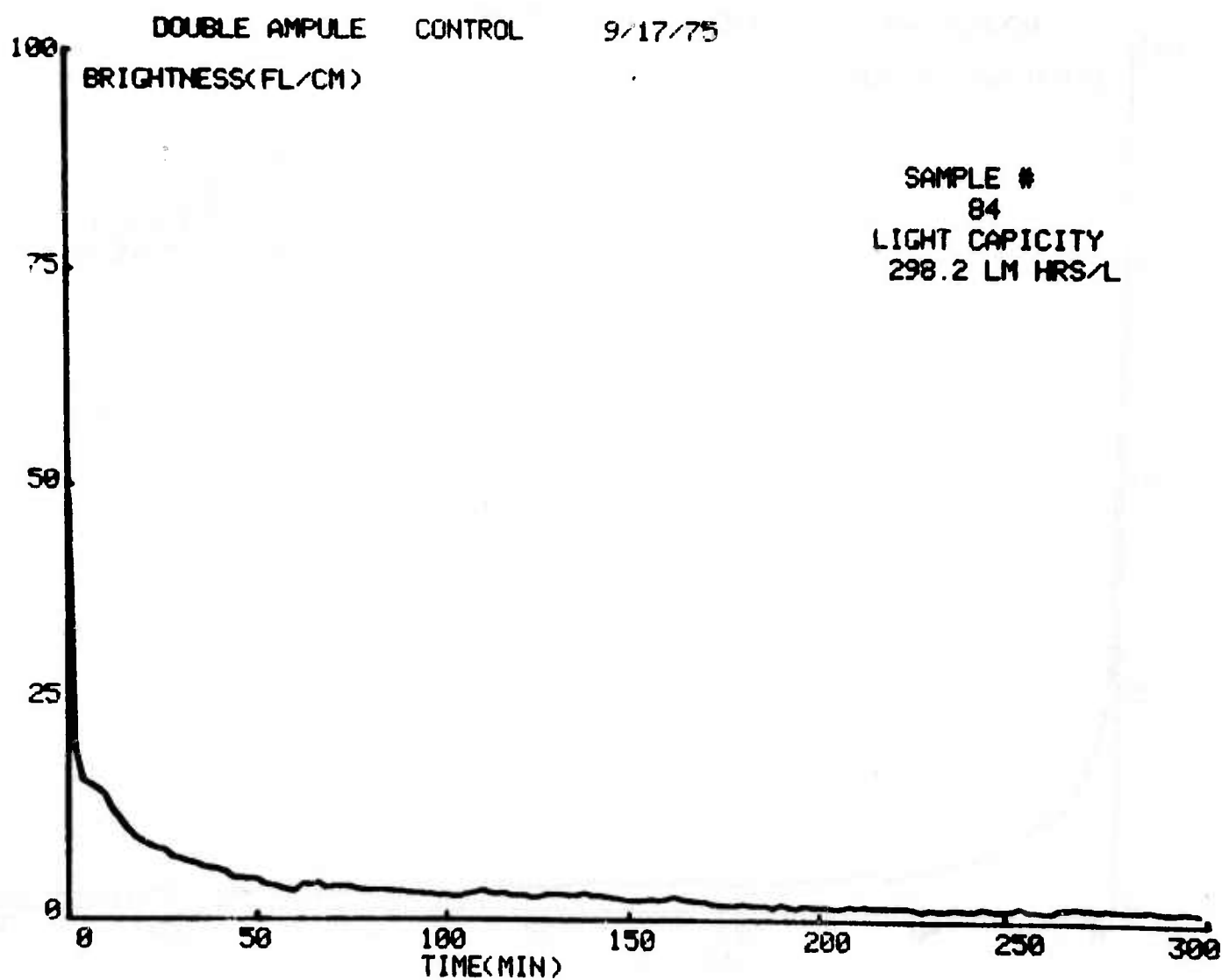


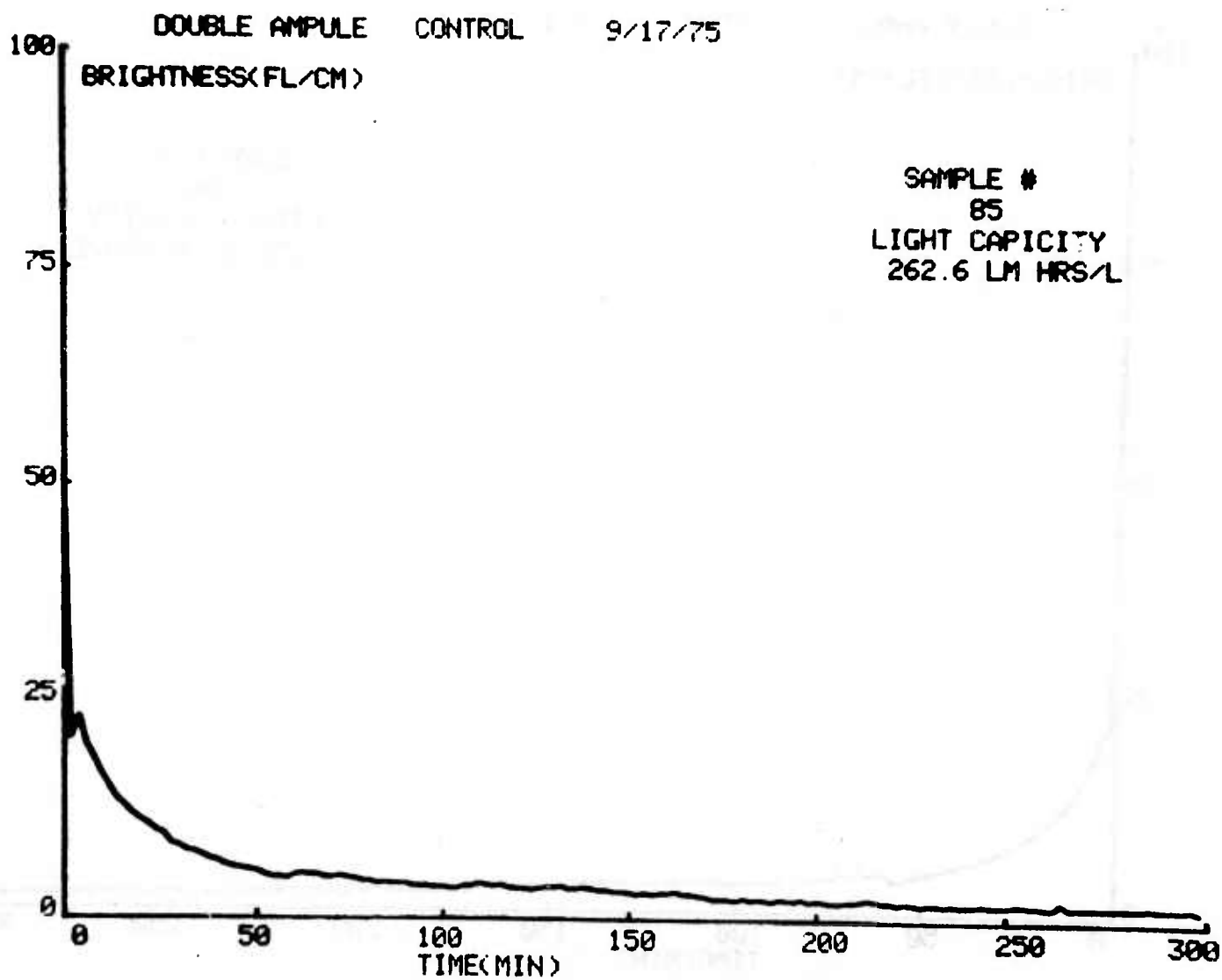


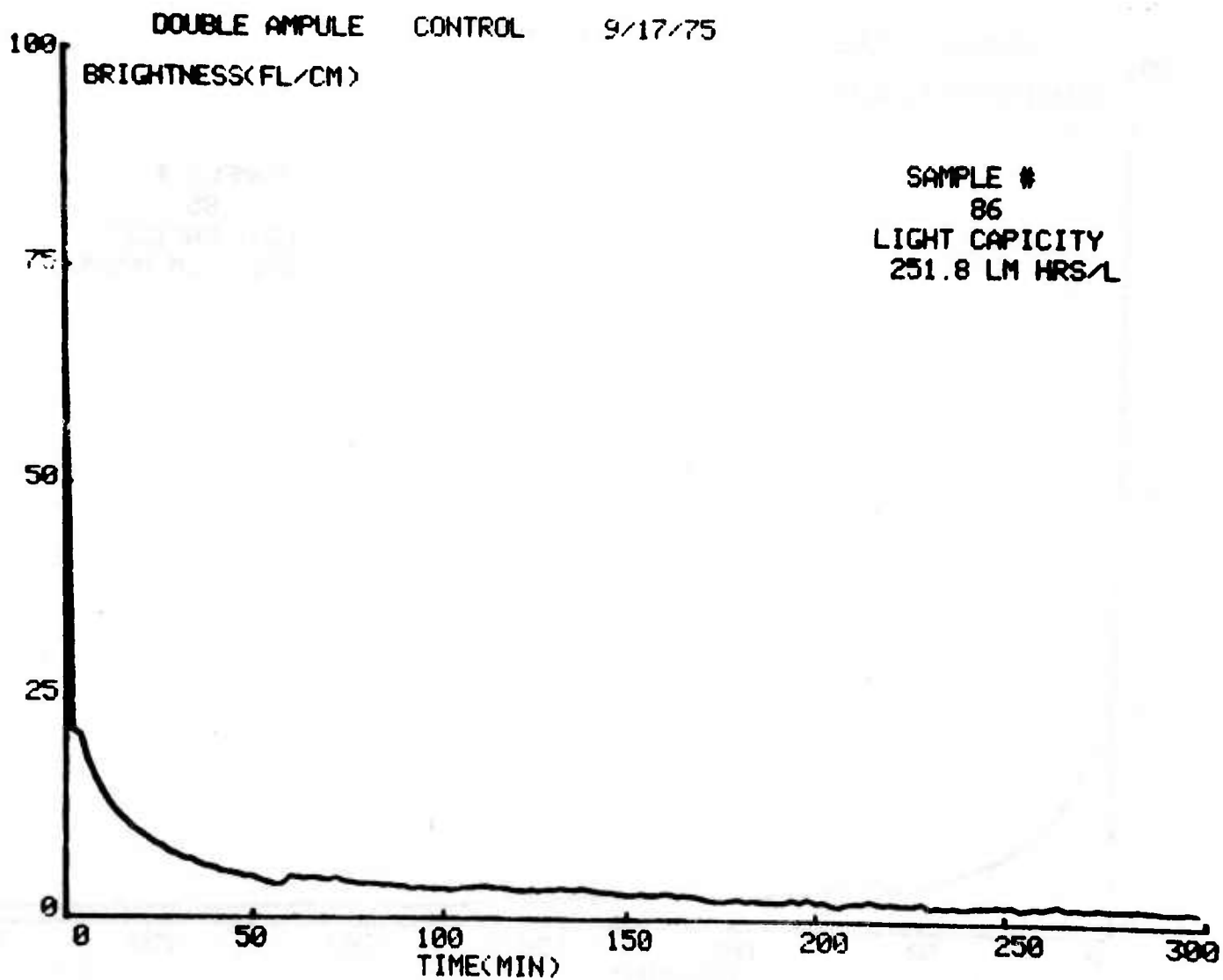


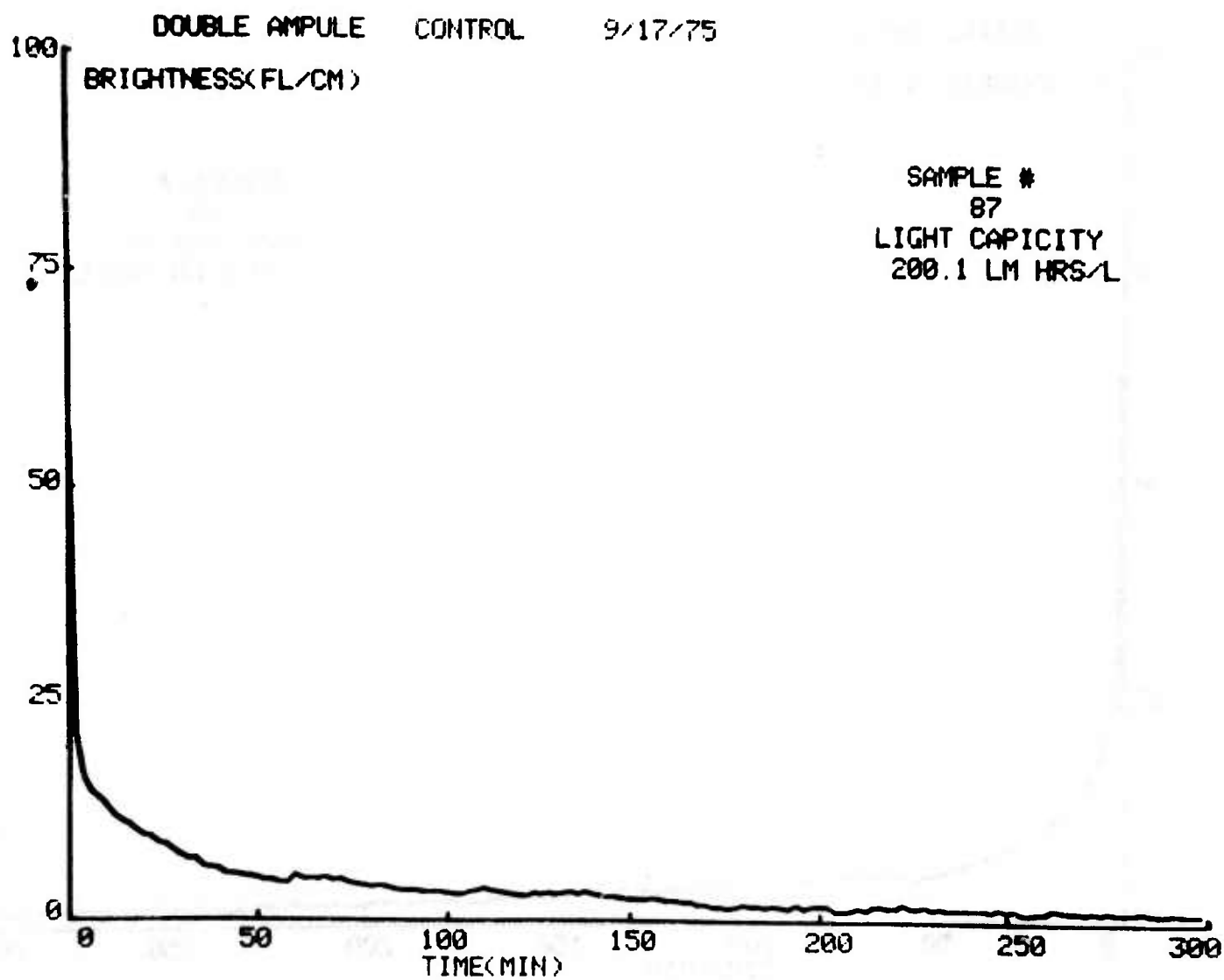


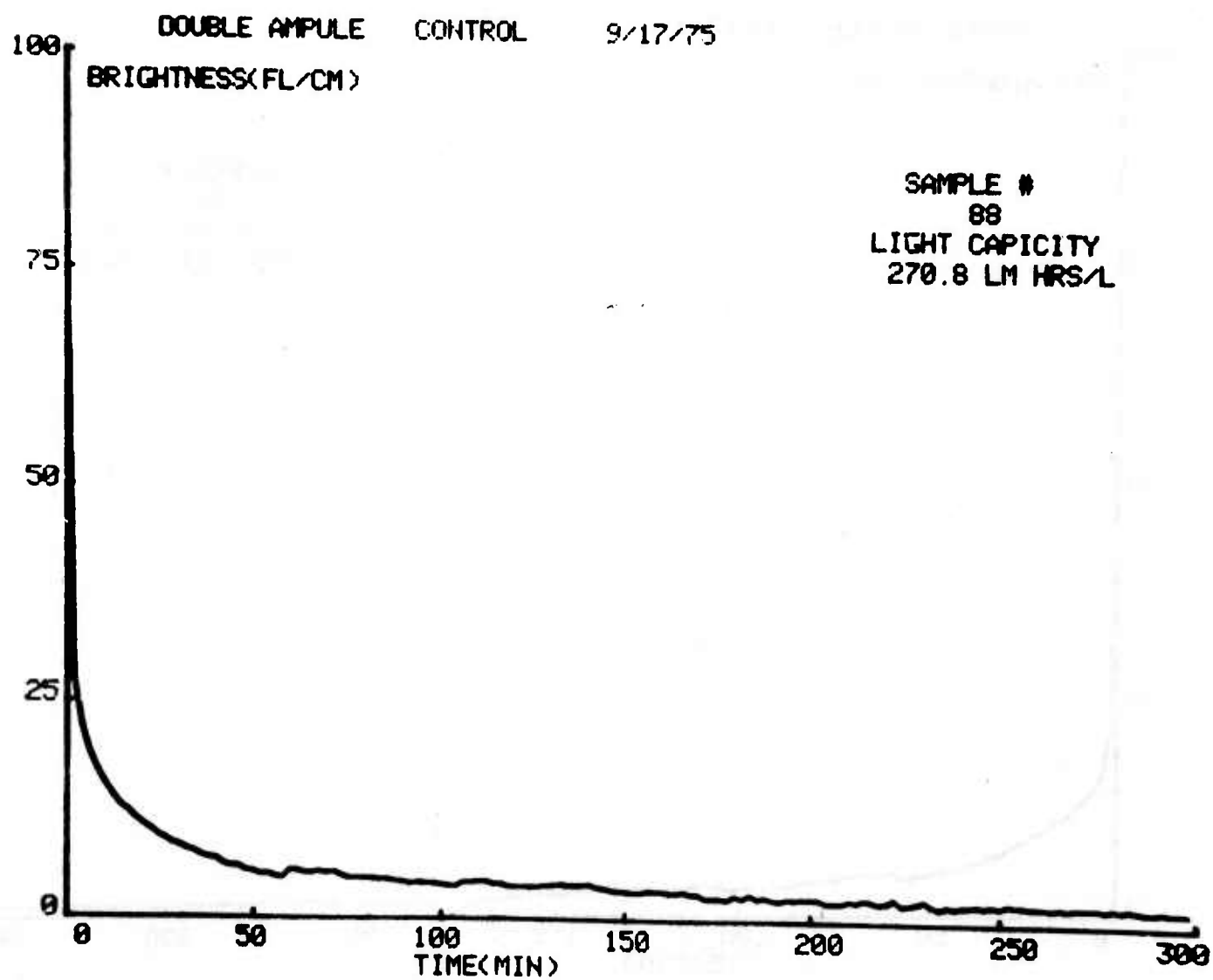




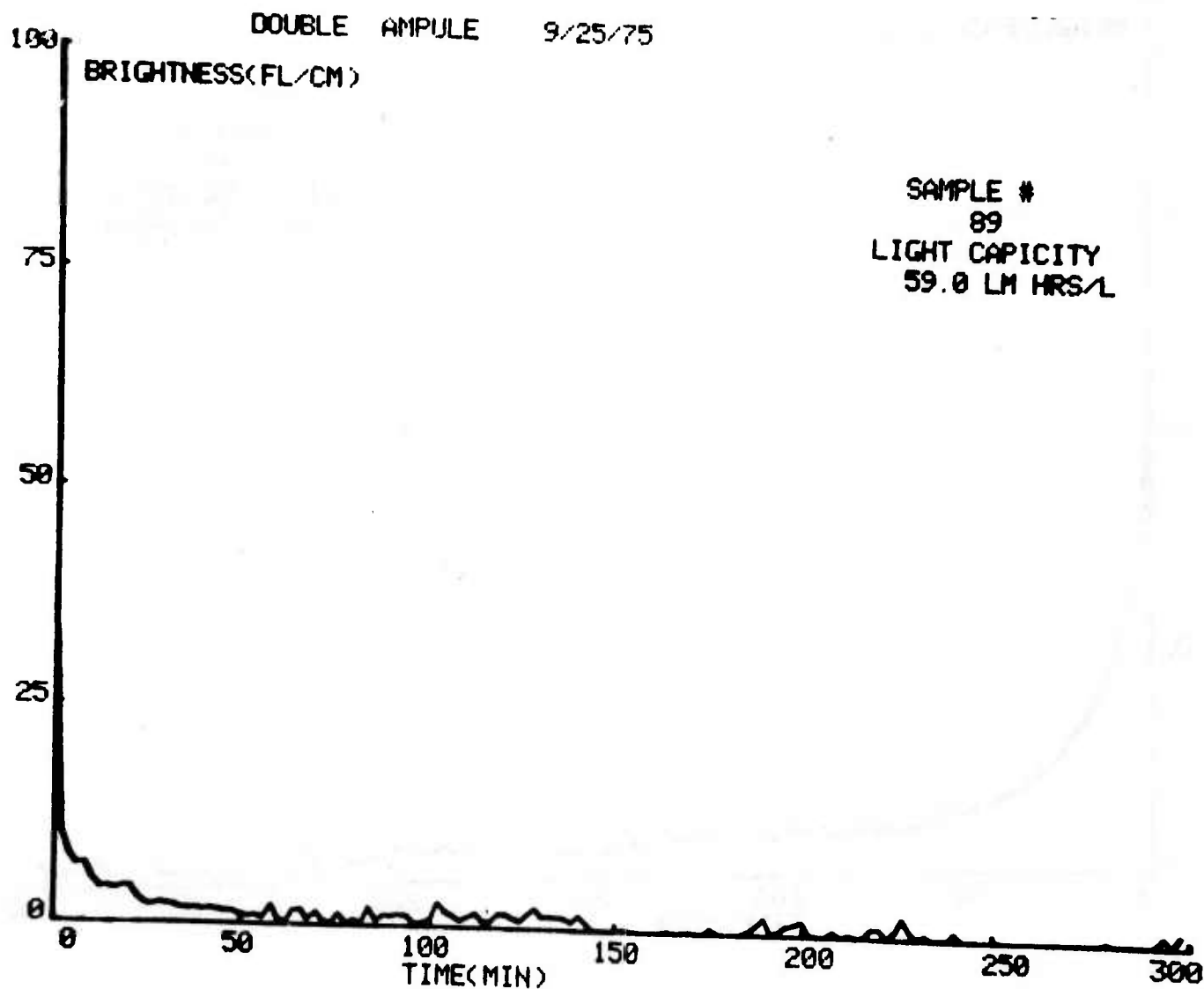




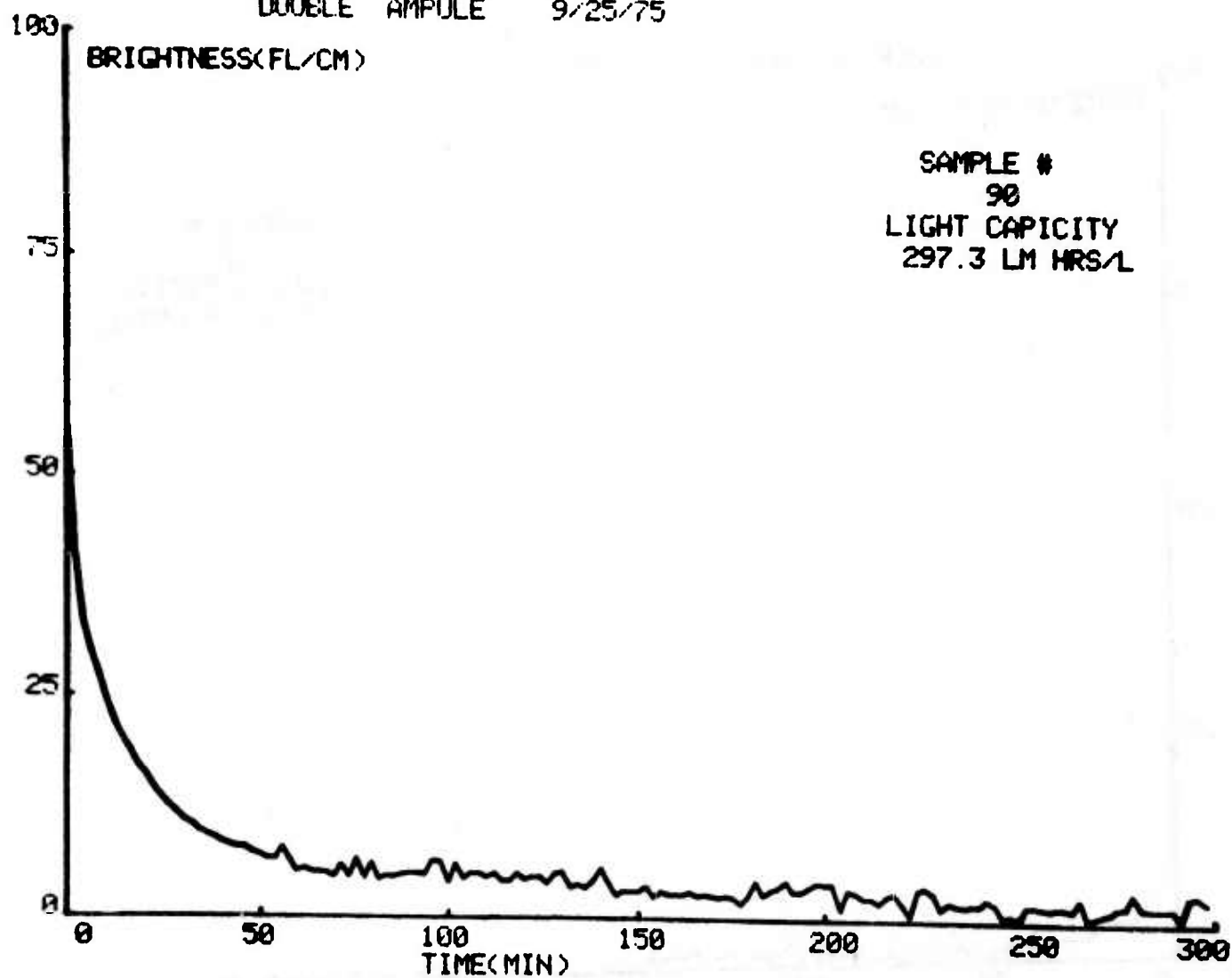


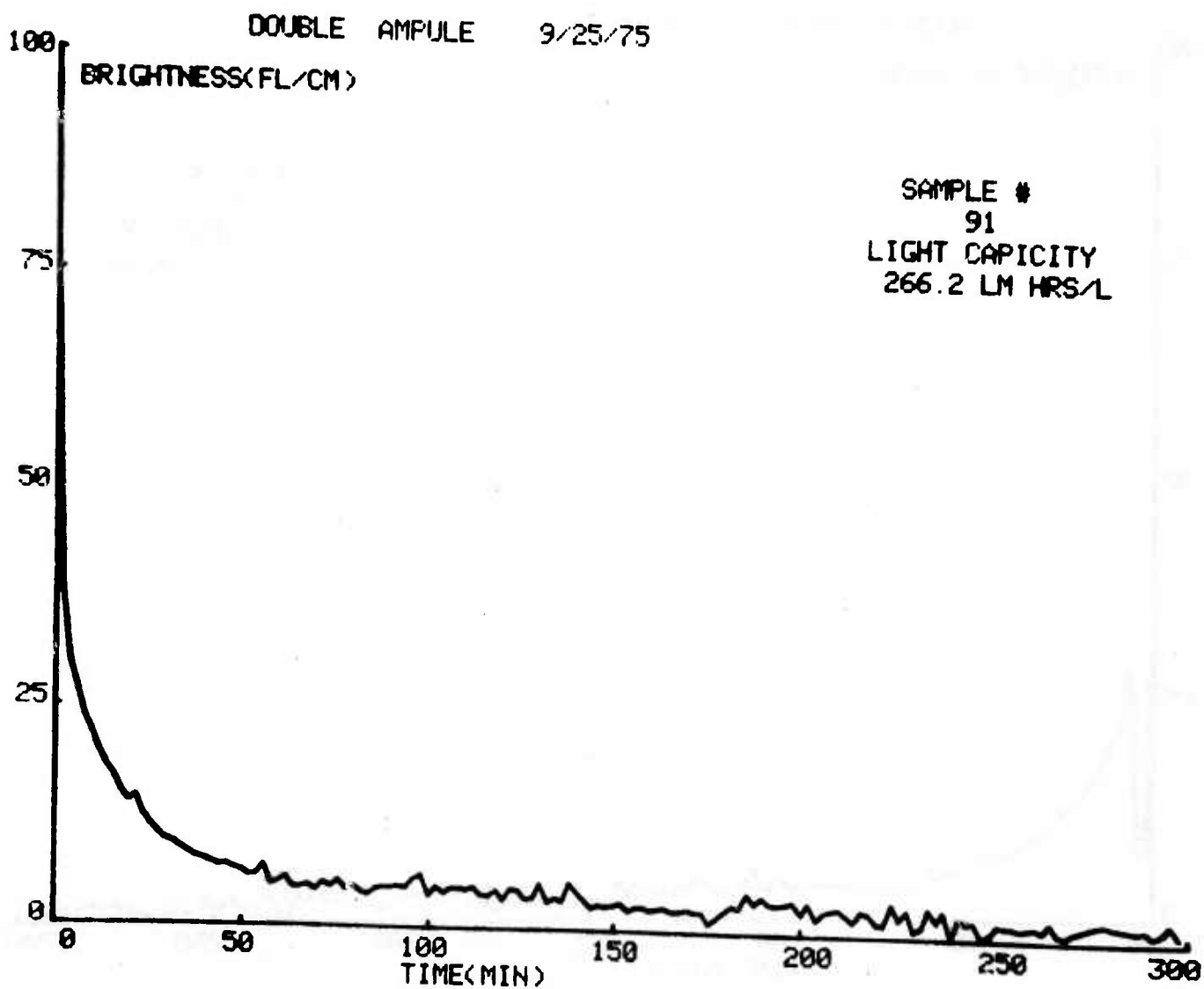


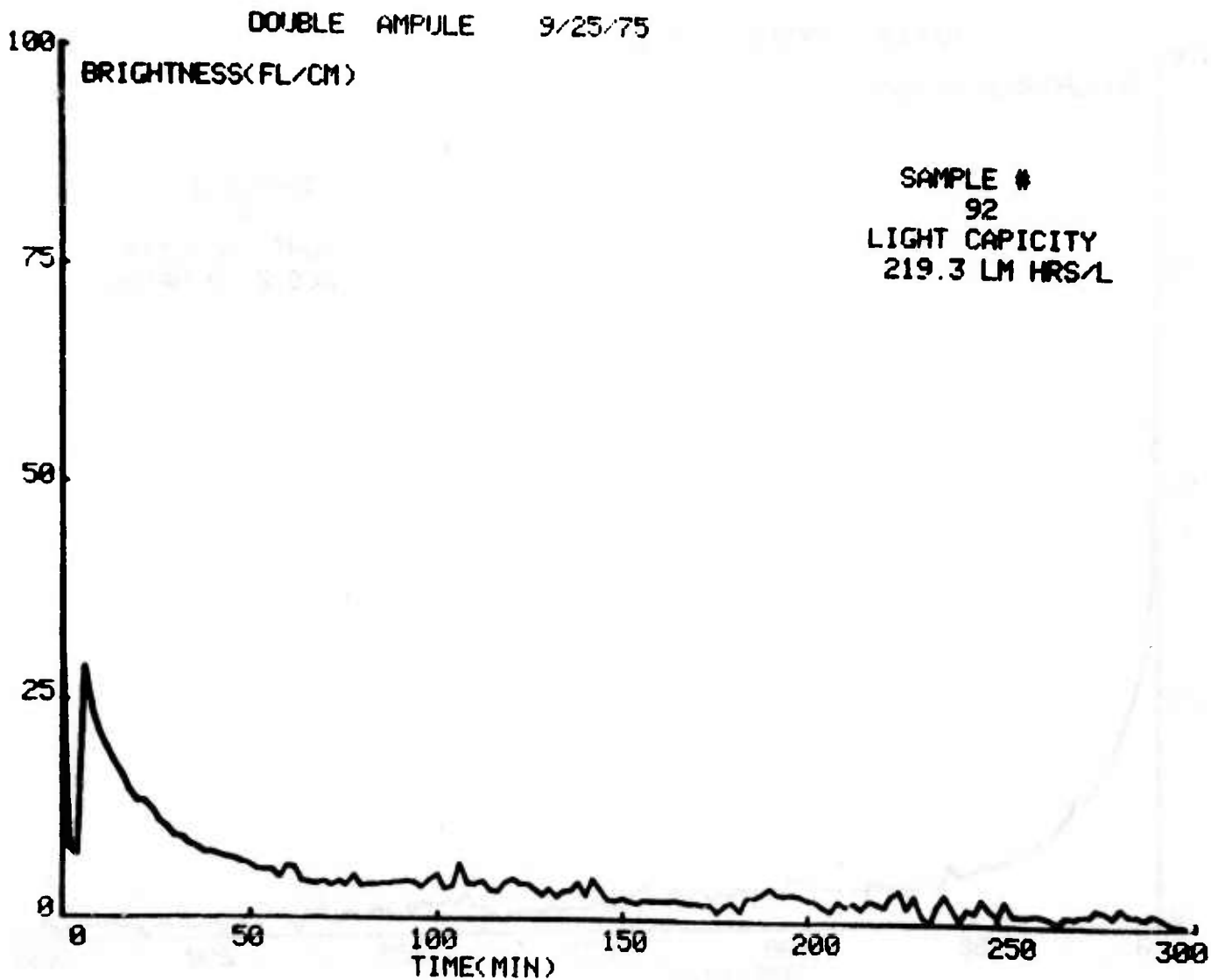




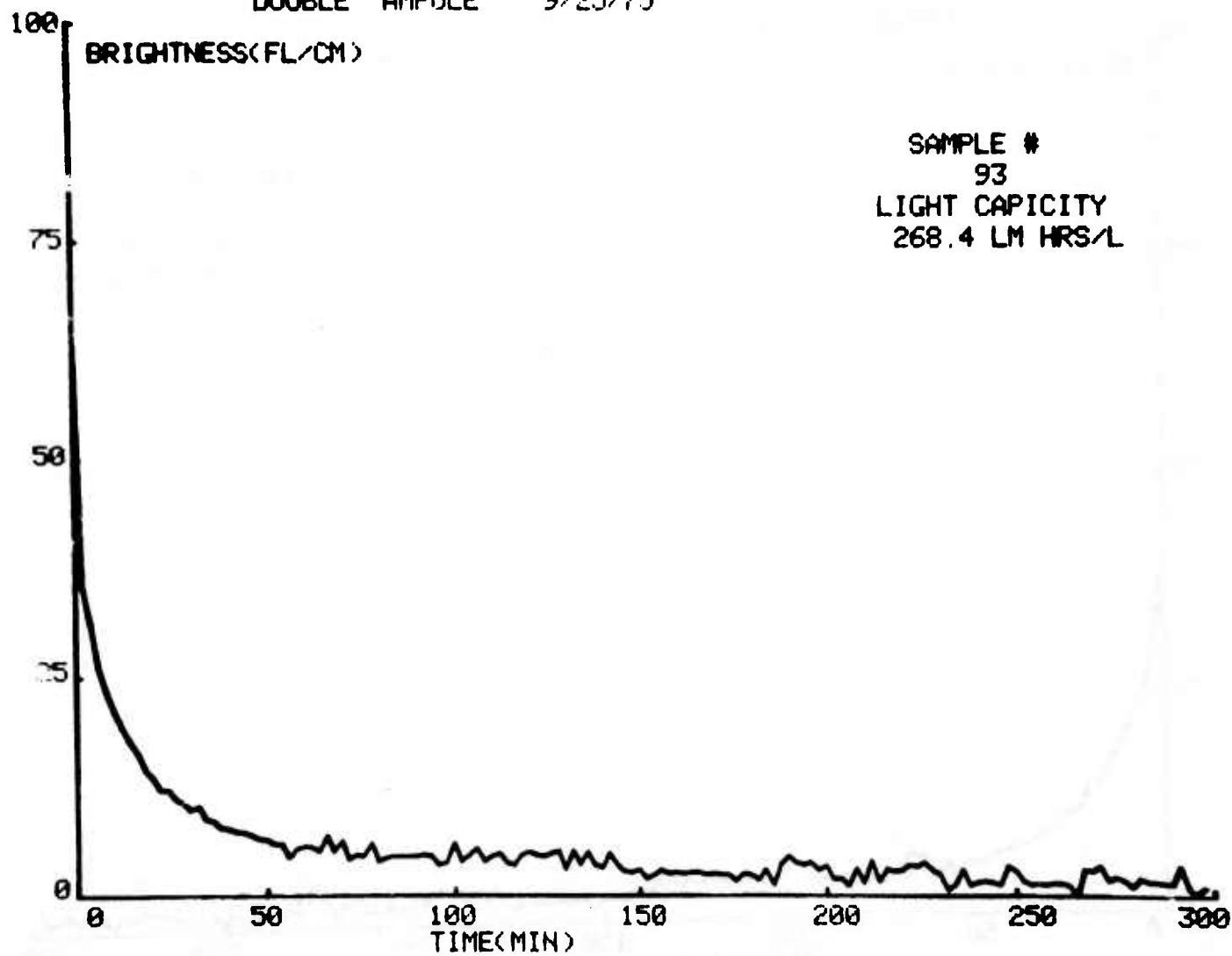
DOUBLE AMPULE 9/25/75



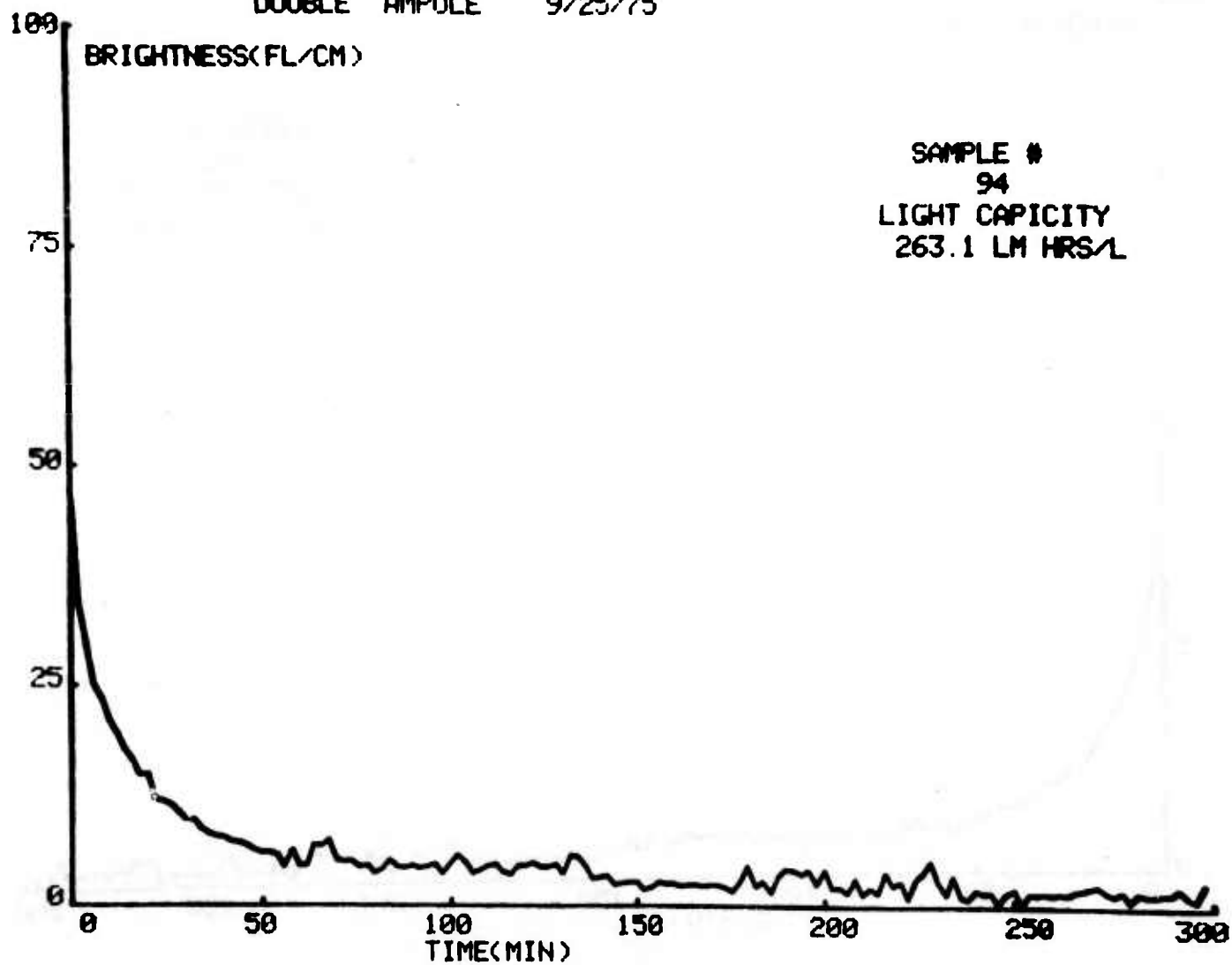


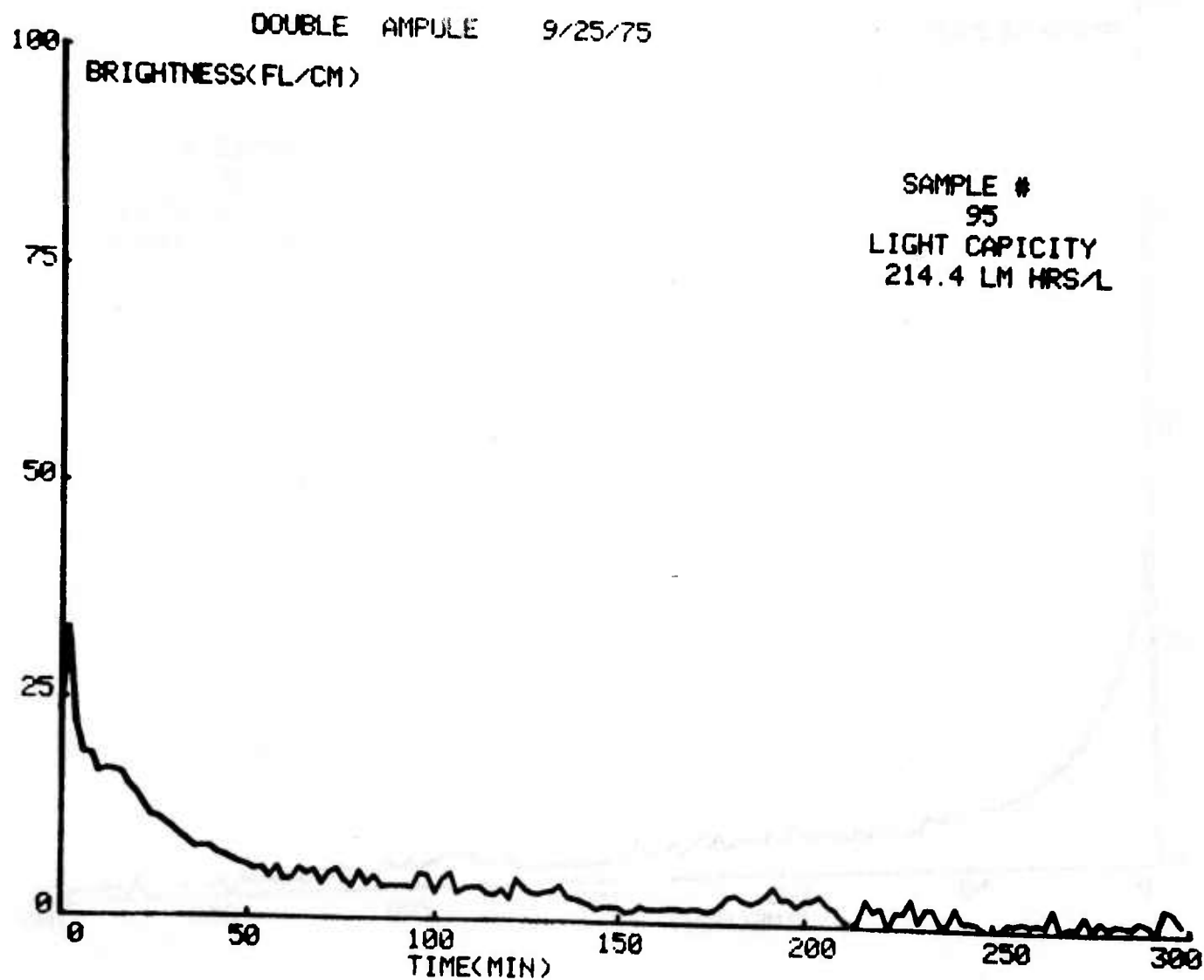


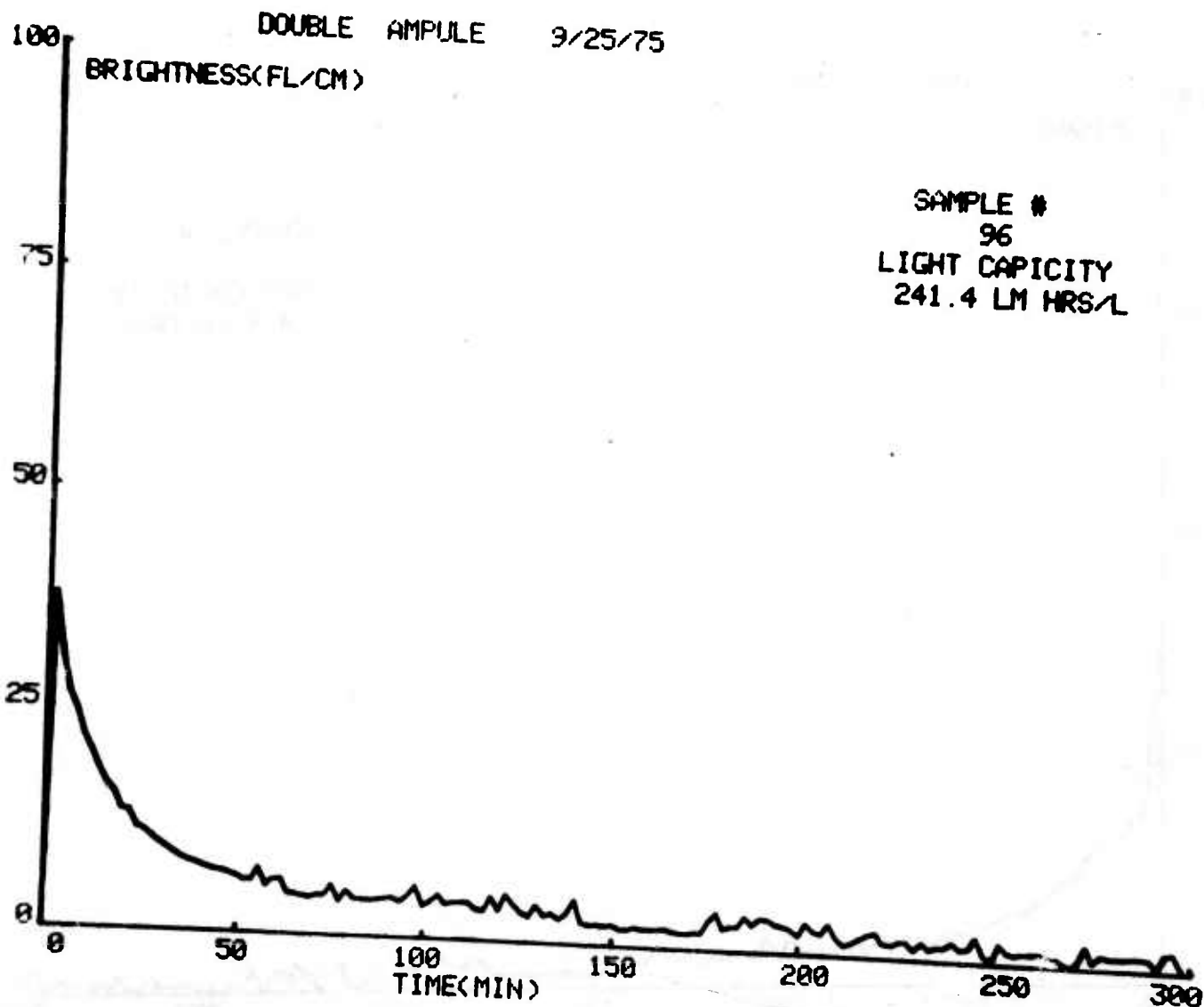
DOUBLE AMPULE 9/25/75



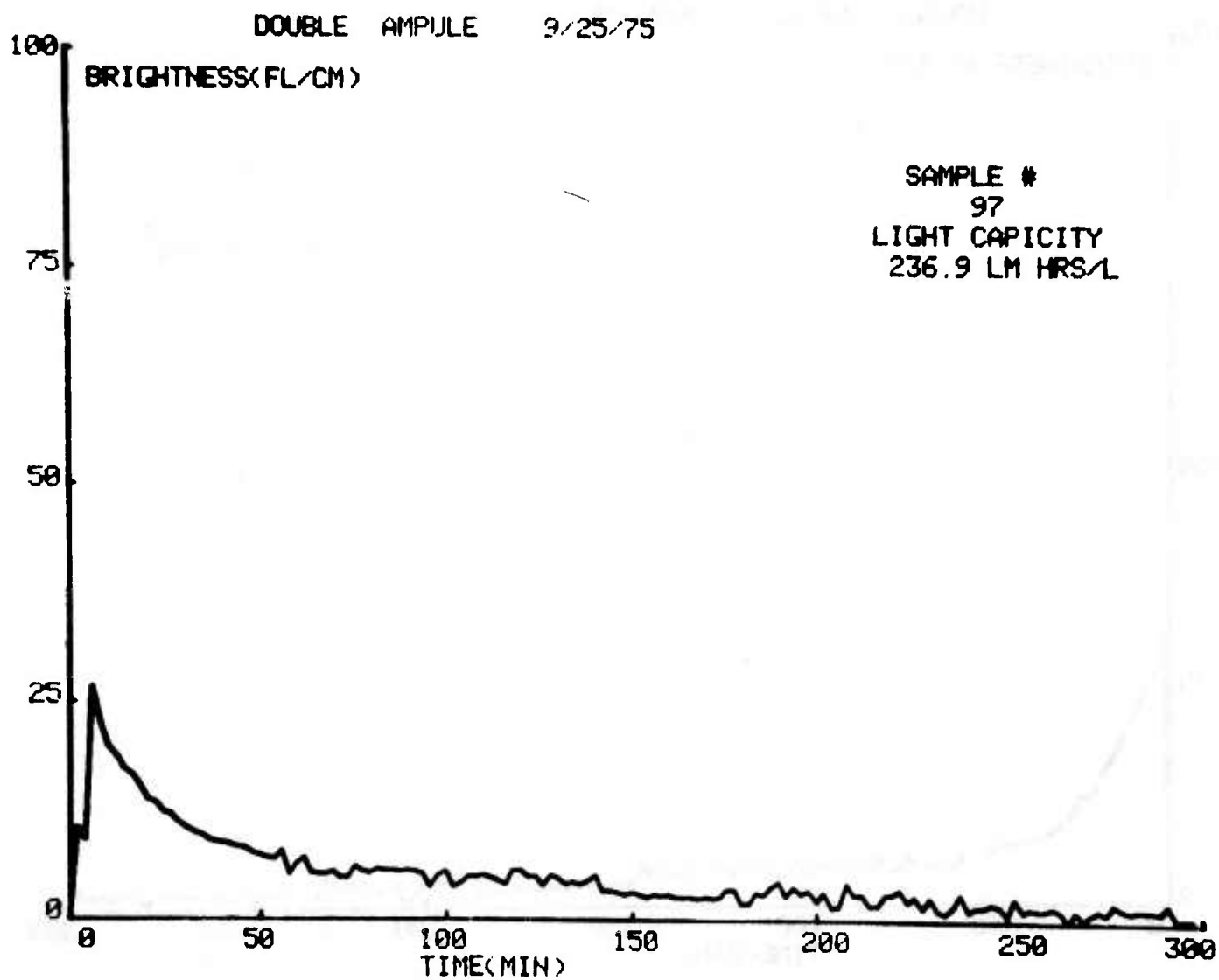
DOUBLE AMPULE 9/25/75



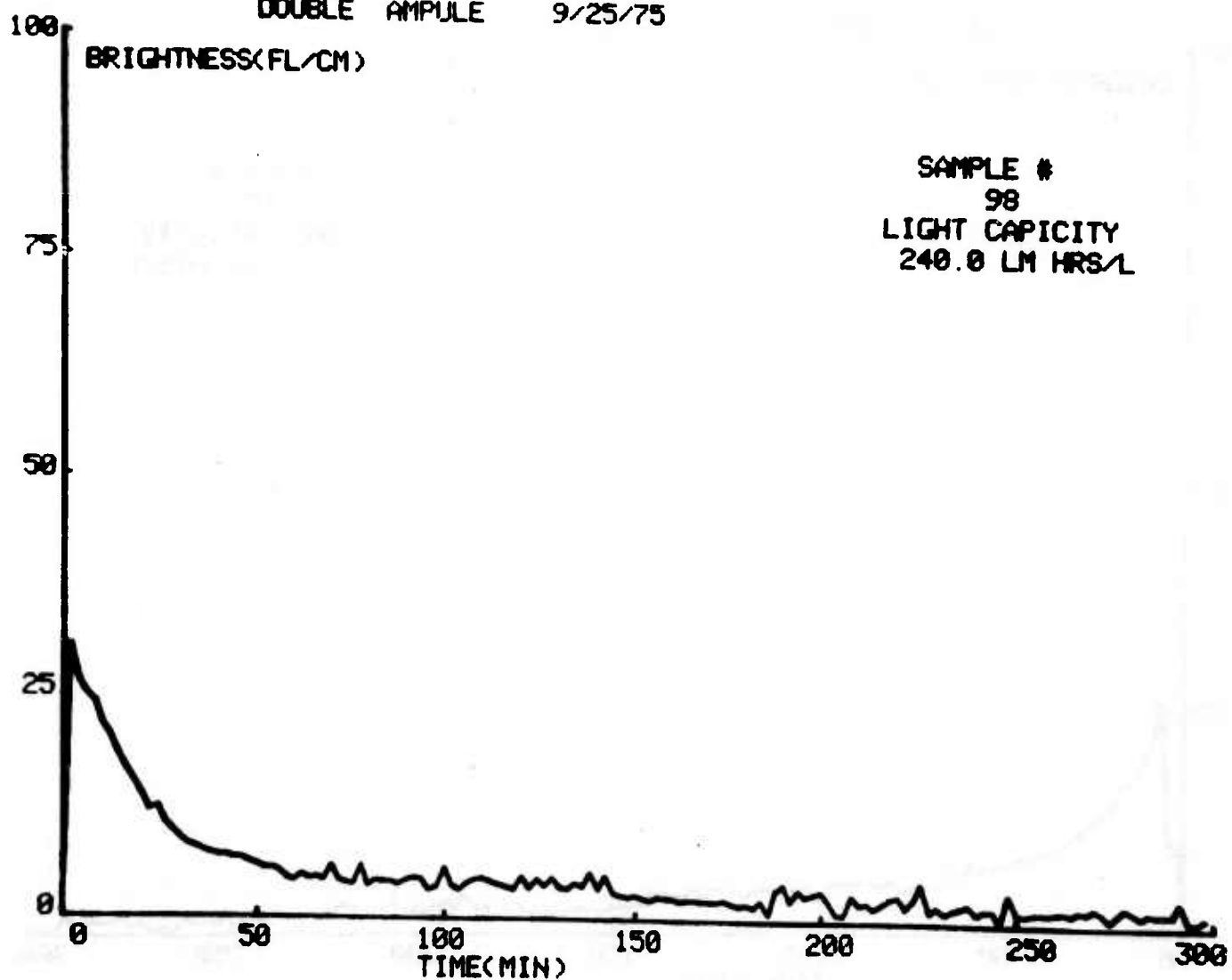


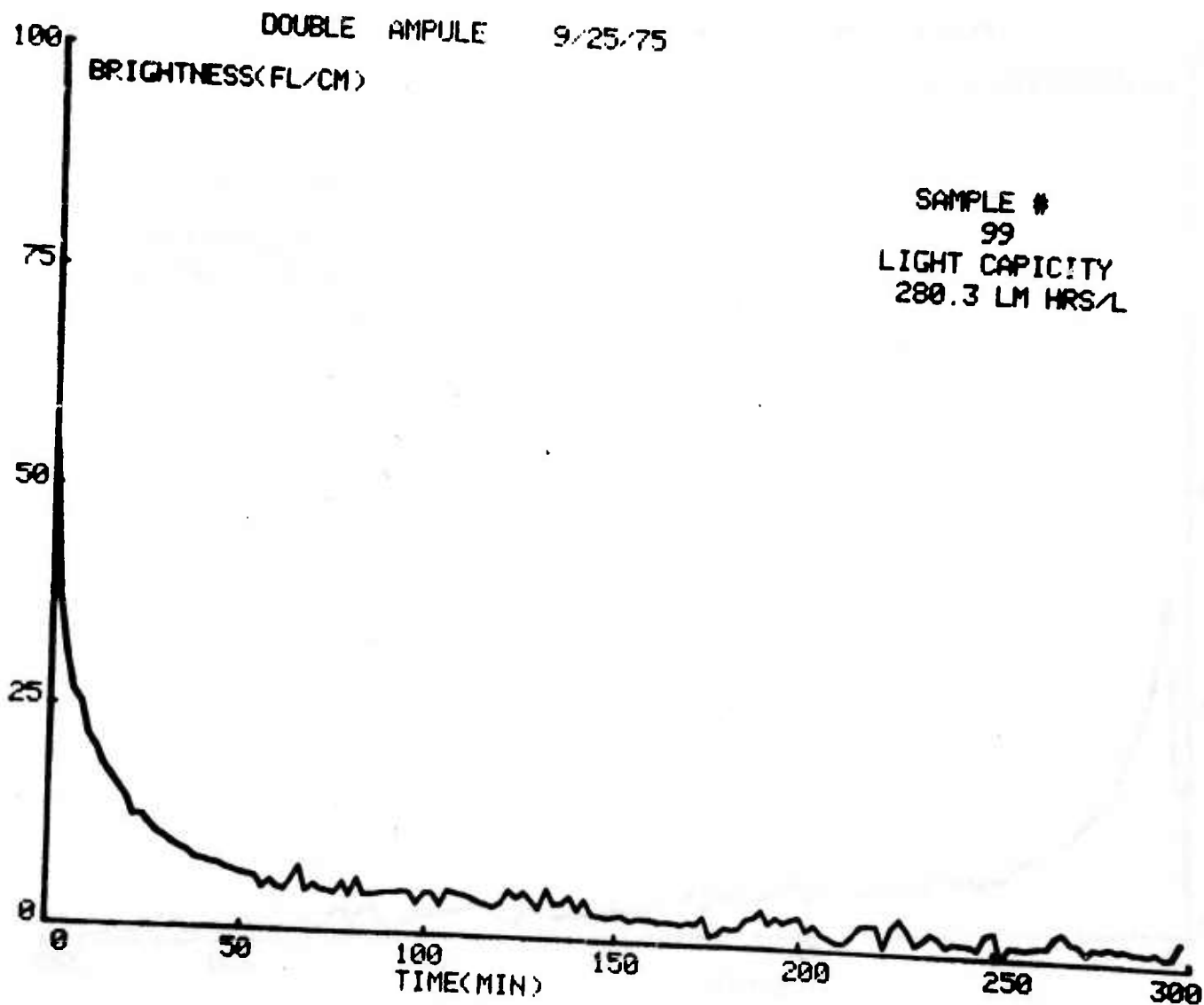


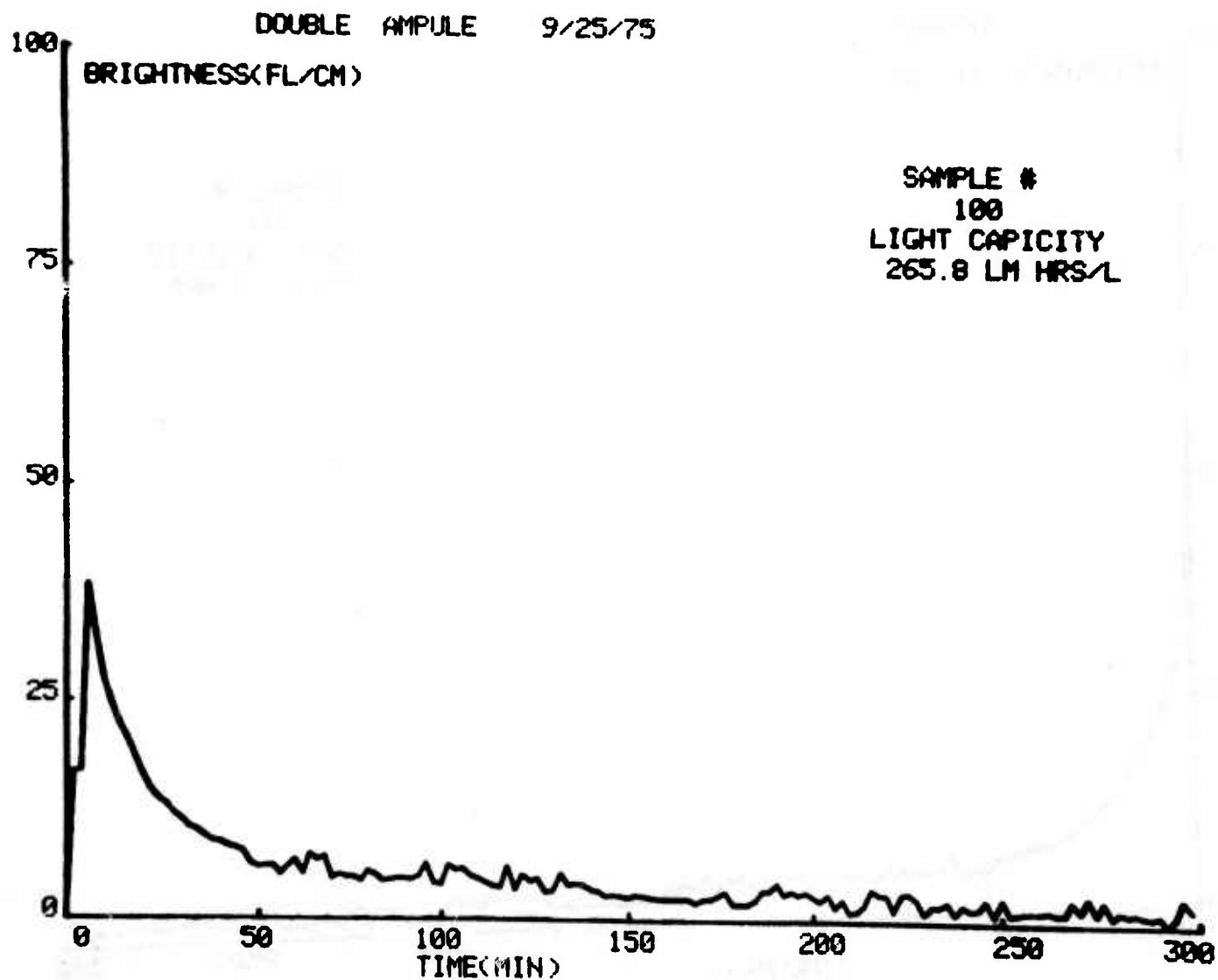




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